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PRACTICAL OBSERVATIONS

IN

SURGERY,

ILLUSTRATED BY CASES.

THE THIRD EDITION.

BY

WILLIAM HEY, F.R.S.

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TO

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OF SURGERY,

THIS WORK IS DEDICATED,

AS A TOKEN OF RESPECT AND FRIENDSHIP,

BY

HIS OBLIGED

AND AFFECTIONATE FRIEND,

WILLIAM HEY.

PREFACE.

THE favourable reception which has been given to the two former Editions of these *Practical Observations*, leads me to hope, that they have been in some degree useful to the afflicted.

Since the publication of the Second Edition, Mr. ASTLEY COOPER has favoured me with a wet preparation of a strangulated femoral Hernia, upon which I set a high value; both as affording a repeated instance of his civility to me, and as exactly agreeing with the representation, given in that Edition, of the parts principally concerned in this disease. In this preparation it is manifest, that the posterior projection of the aponeurosis of the external

oblique muscle of the abdomen (which I have called Gimbernat's ligament) and the falciform process of the fascia lata of the thigh, form one continued membrane. The stricture upon the Hernia, also, is made by those parts, which I have shewn to constitute the femoral ring. And the space betwixt this ring and Poupart's ligament (which is chiefly occupied by the projection above mentioned) is so great, that a Hernia, double the size of the existing one, might be lodged in that space.

In the SECOND EDITION, I published a Figure and Description of a new Truss for the Exomphalos and Ventral Hernia, invented by Mr. EAGLAND, an ingenious surgical mechanician in Leeds. The invention being then recent, I had not had the opportunity of ascertaining its effects. But a trial of four years, in a variety of cases, now enables me to recommend it to the Public. It sits easy upon infants, as well as adults;

and

and answers its purpose more effectually than any other instrument that I have tried. I have, therefore, withdrawn the Plate of the late Mr. MARRISON's machine, and substituted that of Mr. EAGLAND in its place.

Mr. E. makes excellent Spine-machines, upon the true principle of supporting the weak part from the ground.

The remaining Alterations and Additions in this THIRD EDITION are few, and do not require any particular explanation.

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2.	——	23.
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4. 5. 6. 7. 8.	With each its appropriate letter-press leaf of Explanation, --- *to be placed after*	page 204.
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CHAP.

ERRATA:

p. 252. l. 1. *for* fungus *read* fungous.
263. l. 21. - D° - - - D°
280. l. 4. from the bottom, *for* gladry *read* glary.
441. l. 14. *for* tool *read* stool.
461. l. 4. *for* phymosis *read* phimosis.
464. l. 5. - D° - - - D°
467. l. 18. *for* cancorous *read* cancerous.

Addition to the 2d paragraph, p. 209.

When purgatives will not rest upon the stomach, opiates may be necessary to allay its irritability, and afford time for the purgatives to produce their proper effect. For this purpose, the following Medicine (much employed, as I understand, at Guy's Hospital) is strongly recommended:—

℞ Hydrarg. Submuriat. gr. iij—iv.
Pulv. Antimonialis gr. ij—iij.
Opij - - - gr. ss.—gr. j. f^{t} Bolus pro re natâ sumendus.

CHAP. I.

On FRACTURES *of the* SKULL.

CHAP. I.

IT must appear evident to every one, who considers the great advantages which we receive from those strong coverings, with which our all-wise Creator has surrounded the brain, that no portion of them ought to be removed, in the treatment of injuries of the head from external violence, unless such removal is necessary for the cure of the patient.

That excellent surgeon, the late Mr. POTT, strenuously recommended the excision of a circular portion of the scalp, in all cases where the application of the trephine became necessary: and, as the opinion of such an author must have great weight in settling the practice in these cases, I shall examine the grounds of this opinion; being persuaded that it is rarely, if ever, necessary to remove any portion of the scalp, while it remains in a sound state.

CHAP. I.

In Mr. POTT's Works* we find the following directions: "If the integuments are not "wounded, or if the wound made in them be "so small as not to admit a proper examina- "tion of the bone, and the circumstances of "the case are such as render such inquiry "necessary, a portion of the scalp should be "removed. The manner of doing this has for- "merly been the occasion of much difference "of opinion; but there can be no doubt "about the greater propriety of removing "a piece of the scalp for this purpose, by an "incision in a circular form, it being that "form which must afford the clearest view. "If there be no wound, the point stricken "should be made the centre of the incision; "if there be a wound, such wound should be "made the centre of the piece to be removed; "and such piece should always be of size "sufficient to render the application of the "trephine easy."

Let us now examine the practice here recommended. If the scalp is not wounded, or the wound is small, it is impossible to know the extent of the fracture, or the place where the trephine may be applied with the greatest advantage. Allowing therefore, for argument's sake,

* Vol. I. p. 157. oct. ed.

sake, that it is necessary to remove a portion of the scalp for the purpose of applying the trephine; we cannot know, till the course and extent of the fracture have been ascertained, in what place this circular incision of the integuments is to be made. But when the extent of the fracture has been ascertained, by a simple incision of the integuments, made along the course of the fracture, the removal of a circular portion of the scalp becomes unnecessary. For, if the fracture and consequent incision are extensive, a gentle separation of the divided parts will afford ample room for the application of the trephine. If the fracture is of small extent, a crucial division of the scalp will be sufficient for that purpose.

I have a further objection to the method proposed by Mr. POTT. I consider it not only as unnecessary, but injurious. For, supposing a circular portion of the scalp to be removed where the trephine is applied, there will then remain nothing to cover the dura mater, when the wound is healed, but a tender cicatrix: whereas, if the integuments (except the pericranium) had been preserved whole in that part, they would in some measure have supplied the loss of bone; and would have

CHAP. I.

afforded in future a considerable degree of protection to the brain, which by the removal of the cranium is unavoidably exposed to danger.

I consider the preservation of the scalp as a material advantage to a patient who has suffered a fracture of the skull; not only with relation to the benefit which that natural covering of the brain may afterwards afford him, but also with relation to the effect which such preservation has in expediting the cure. In many cases, the scalp may be applied immediately to the cranium and dura mater, after the removal of such part of the bone as is necessary to be removed: and where the immediate application is improper, the scalp may be kept separate for a time, without injury to the patient, till the parts underneath it are brought into such a state as will admit a reunion.

If the excision of a portion of the scalp be considered as necessary, when a single application of the trephine is to be made; for the same reason such excision must be repeated, or enlarged, when the extent of the fracture requires a repeated application of that instrument. It is easy to conceive what a devastation of the scalp must be made in a very extensive

extensive fracture, by a surgeon who conducts himself agreeably to this doctrine. The late Mr. GOOCH, who was an excellent surgeon, applied the trephine thirteen times in one case, and for that purpose removed the whole portion of scalp covering the fractured part of the cranium. An inspection of the Plate, in which this fracture is represented, is sufficient to convince any experienced surgeon how tedious the cure must have been; and how greatly the patient would have been benefited by the preservation of the scalp, if such preservation had been practicable.

It is well known by every experienced surgeon, that the existence of a fracture cannot always be ascertained till the cranium is exposed to view. Suppose then a surgeon called to a patient labouring under the usual symptoms of a fracture of the skull, where there is no wound, nor inequality in the surface of the cranium, to be perceived; how is he to act in such a case? According to the directions given by Mr. POTT, it seems that he ought to make a circular excision of the scalp, where the injury has been received, for the purpose of ascertaining the existence of a fracture. "If there be no wound, the point stricken "should be made the centre of the incision."

CHAP. I.

I am certain, however, that the surgeon whose practice is conformable to this direction, must not unfrequently have reason to censure the temerity of his own conduct, in depriving a patient, without necessity, of a portion of scalp, where a simple incision only was needful.

I had occasion, when I was a young man, to witness an error of this kind in a Surgeon whose abilities I respected. A circular portion of the scalp was removed, under the expectation of finding a fracture of the cranium, to the mutual regret of the surgeon and patient; as a tedious dressing of an unnecessary wound was the consequence. This circumstance struck me forcibly, and led me to use great caution in removing any portion of the scalp without an indubitable necessity.

If an unnecessary removal of the scalp ought to be avoided in the treatment of fractures of the skull, it is of still greater importance to preserve every portion of the cranium, which the safety of the patient does not compel us to remove.

The only instrument now in general use, for sawing out any portion of the cranium, is the trephine, or trepan. I speak of these as one, as they differ only in the manner

of

of working. The use of this instrument causes an unnecessary destruction of the cranium, and in other respects is attended with inconvenience. The piece of bone sawed out by the trephine must be of one figure, whatever be the form of the fracture; and the quantity of bone removed must be generally greater (sometimes considerably greater) than the case requires. CHAP. I.

The purposes for which any portion of the cranium is removed are, to enable the surgeon to extract broken fragments of bone, to elevate what is depressed, and to afford a proper issue to blood or matter that is, or may be, confined. I will consider each of these purposes with respect to the application of the trephine.

When a broken fragment of bone is driven beneath the sound contiguous part of the cranium, it frequently happens, that the extraction cannot be executed without removing some of the unbroken part, under which the fragment is depressed. This might generally be effected with very little loss of sound bone, if a narrow portion of that which lies over the broken fragment could be removed. But such a portion cannot be removed by the trephine. This instrument can only saw out a

CHAP. I.

circular piece. And as, in executing this, the central pin of the saw must be placed upon the uninjured bone; it is evident, that a portion of the sound bone, greater than half the area of the trephine, must be removed at every operation. When the broken and depressed fragment is large, a repeated application of the trephine is often necessary; and a great destruction of sound bone must be the consequence.

When the injury consists merely of a fissure with depression, a small enlargement of the fissure would enable the surgeon to introduce the point of the elevator, so as to raise the depressed bone. But a small enlargement of the fissure cannot be made with the trephine. When it is necessary to apply the elevator to different parts of the depressed bone, a great deal of the sound cranium must be removed, where a very narrow aperture would have been sufficient.

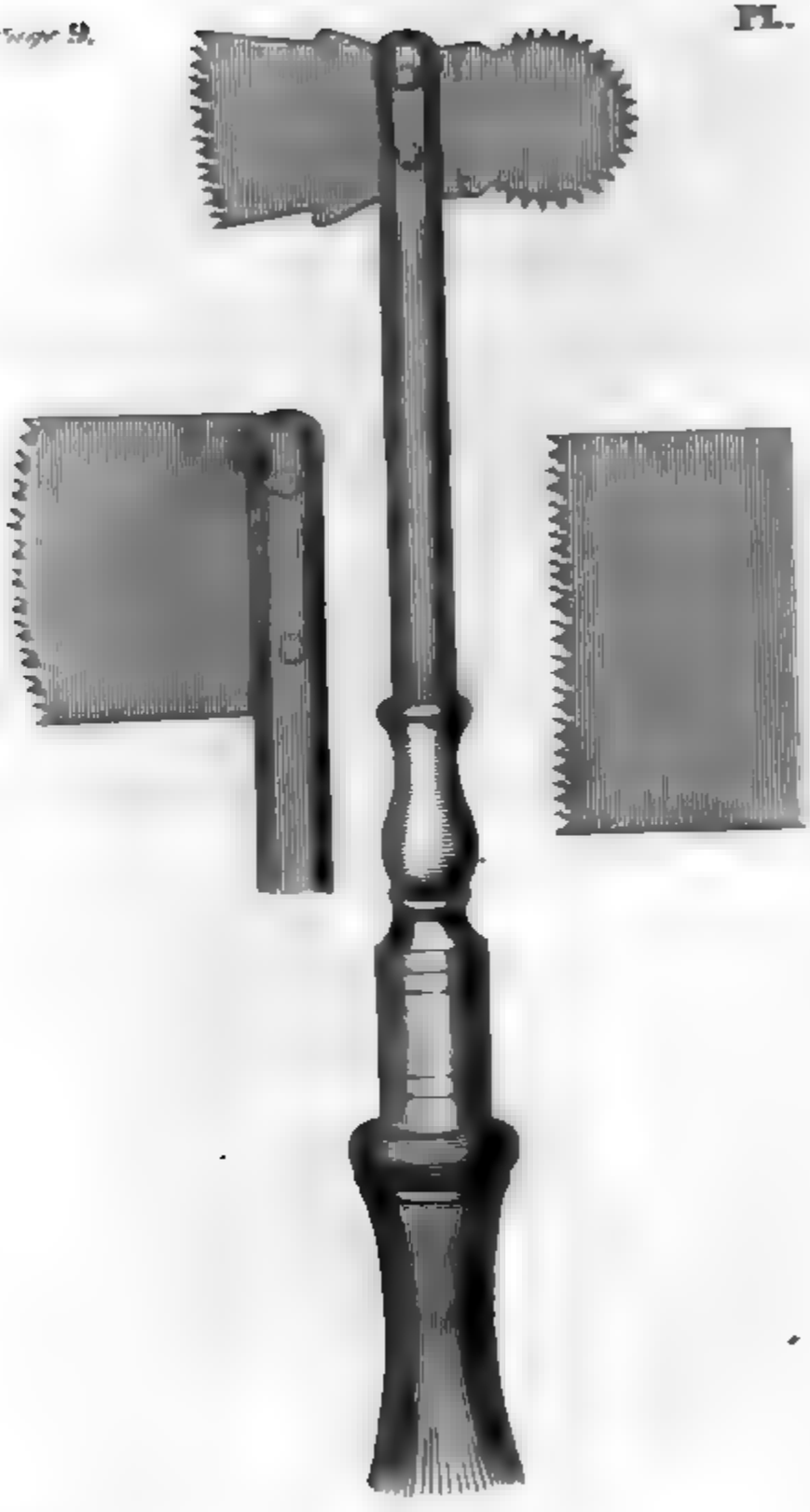
The same reasoning will apply to the case of openings made for the purpose of giving a discharge to extravasated blood, or matter.

If a saw could be contrived, which might be worked with safety in a straight, or gently curvilineal, direction, it would be a great acquisition to the practical surgeon. Such a saw

I can

Fig. 9.

Pl. 1.



I can now, with confidence recommend, after a trial of thirty years; during which time I have rarely used the trephine in fractures of the skull. Its use has been adopted by my Colleagues at the General Infirmary in Leeds; and will be adopted, I should hope, by every surgeon who has once made trial of it. CHAP. I.

It was first shewn to me by the late Dr. COCKELL, an ingenious Practitioner at Pontefract, to whom the public is indebted for the discovery, or revival, of this excellent instrument. A saw, formed on the same principle, is represented in SCULTETUS's Armamentarium Chirurgicum: but I understood Dr. COCKELL to say, that the instrument which he shewed me was of his own invention; and that he had used it with great advantage in extensive fractures of the skull. Dr. COCKELL's saw had a semicircular edge; but the edge may be made straight, or of any degree of convexity which may be thought most useful. The straight edged saw executes its task with greater readiness; but the convex edge is necessary when the bone is to be sawed in a curvilineal direction*. It is also useful when

* The saws which I now use were made by Mr. WILLIAM BOWLING, clock-maker in Leeds. The material is

CHAP. I.

when the thickness of that part of the cranium which is to be sawed out is very unequal.

This instrument is worked with ease, if the pressure made upon it by the hand is light. It saves much time in cases of extensive fracture, where the repeated application of a trephine would have been needful; and it may be used with less danger of wounding the dura mater, if the same precaution is used, in examining from time to time the depth of the groove, as is necessary in the use of the trephine.

I shall not enter at large upon the treatment of injuries done to the head by external violence; but shall refer my reader to the many excellent treatises and observations which have been already published on that subject. I shall only give a short sketch of my own practice, as far as relates to the preservation of the scalp and cranium.

When I am called to a patient labouring under the symptoms of a fractured skull, if I find no wound in the scalp, upon examining the

is that kind of spring which is used in spring-clocks; and the teeth are *set off*, as the workmen express it. They cut a bone with ease; and move freely in the groove, in the act of sawing. The largest saw is one inch and three eighths in breadth, which is sufficient for the division of the Tibia. Plate 1.

the head when shaved, I make an incision through the scalp in a part where a fracture is most to be suspected. If no fracture appears, I take so much blood from the divided arteries, as the state of the patient seems to require, and then unite the lips of the wound.

If the bone is fractured, I enlarge the wound by a simple incision along the course of the fracture; tracing the fissure, or fissures, through their whole extent, unless they are continued to the basis of the skull, or where their limits cannot be explored. I do this either by cutting carefully upon the fissure, if it is small; or, if it is wide, and the pericranium much separated, by placing the back of my knife upon the fissure, and slitting open the integuments, as the course of the fracture directs. Having thus exposed the whole extent of the fracture, avoiding all unnecessary detaching of the pericranium; and having observed what is necessary to be done, for removing broken fragments, raising depressed bone, or giving issue to confined matter; I saw off such pieces of the cranium as require to be removed, while the integuments are held back by the assistants.

The line in which the saw is to be moved, is first marked out by drawing it gently along the

CHAP. I.

the bone in the proper direction; or the surgeon may fix the course of the groove, by placing the nail of his thumb or fingers upon the cranium, as a guide to the saw. It happens not unfrequently that the fissure itself may be made the groove in which the saw is worked; and in this case no more bone is removed than that which the injury done to the head has rendered useless, as in the following Case.

CASE 1.

Case 1. In 1731, a Son of Mr. CHRIST^R TOPHAM, of Leeds, aged fourteen years, received a blow upon his head, from a piece of brick thrown at him. He vomited frequently on the two first days after the accident, and then retained his food. His parents, not apprehensive of the real nature of the injury, did not send for me till the fourth day after the accident. He had then a considerable degree of fever, but was still able to walk about his room, though some portions of the brain were lying amongst the hair.

Upon examination, I found a fracture of the right parietal bone, of an oval figure, two inches and a quarter in length, and an inch and half at its greatest breadth. To this extent

CHAP. I.

Case 1.

extent the bone was depressed, but not separated from the contiguous part of the cranium. Near the middle of the fractured part, where the depression was the greatest, there was a hole; and there the broken edges of the bone had pierced the dura mater, and wounded the brain. The bone was not depressed beyond the extent of the fracture. With the convex-edged saw I took out the depressed bone, by making the exterior fissure to be the groove in which the saw was worked, without the loss of any portion of uninjured bone, except a very small part at each extremity of the fracture, where it was necessary to bring the grooves to a point*. The removal of the depressed bone in this case would probably have required the application of a trephine at four places.

The superiority of an instrument, which will enable the surgeon to remove such a piece of bone, without any other loss to the patient, than of the part rendered useless by the injury, must be obvious to every one. The time taken up by the operation was also considerably shortened; and less danger of wounding the dura mater was, in my opinion, incurred.

A fungus,

* See Plate 2. Fig. 1.

CHAP. I. Case 1.

A fungus, about the size of a large nutmeg, arose from the brain, and had a strong pulsation. I made no pressure on the fungus, but only applied mild dressings, generally dry lint. At the end of three weeks, the fungus was reduced nearly to a level with the rest of the wound, which then healed speedily.

In extensive fractures, where a long portion of bone is depressed, the advantages arising from the use of this instrument require no laboured comment. The following Case will make them sufficiently manifest.

CASE 2.

Case 2. In 1784, I was sent for to Garforth, a village about seven miles from Leeds, to the son of a collier, aged thirteen years, who had suffered a fracture of the skull, from the fall of a coal in the shaft of a coal-pit. The boy had vomited frequently, but continued sensible. There was a contused wound on the left side of his head, about three inches in length. I enlarged this wound, and traced the fracture through its whole extent. It began in the frontal bone, a little above the temporal muscle, and crossed the coronal suture at right angles; running obliquely backwards and downwards, across the left parietal bone, to the occipital

suture a little above the mastoid process. On the anterior part of the parietal bone the fracture was broad, and several broken pieces were depressed. In the remaining part, the fissure was wide; but the cranium remained at its due level. In my notes, made during my attendance on this Patient, I find it remarked, that it would have required eight or nine perforations of the trephine, in order to remove the depressed pieces, and enlarge the fissure; whereas I was able to take out all the depressed pieces, without applying the saw beyond the breadth of the fracture, except where I thought it proper to enlarge the fissure a little; and this was effected by a longitudinal division of the bone on one side of the fissure.

CHAP. I. Case 2.

The dura mater was found covered with coagulated blood where the bone was broken into fragments. Beneath the posterior part of the fracture, where there was merely a gaping fissure, without depression of the cranium, I found a lacerated wound of the dura mater, two inches in length.

I did not remove any portion of scalp in this operation.

An oblong fungus arose through the aperture in the dura mater; but with simple dressings, without pressure, the fungus retired as

the

CHAP. I. Case 2.

the cicatrization advanced; and the boy got well, without having lost any portion of the scalp, or any part of the cranium, except the broken fragments, and a narrow strip of bone which lay over the wound of the dura mater.

My usual method of dressing after the operation, has been, to cover the dura mater with lint, and to lay down the flap of scalp upon the lint, till granulations have arisen from the dura mater, and filled up the cavity made by the loss of bone. I have then placed the flap in immediate contact with the inferior granulations, and, supporting it with plasters, have thereby promoted a speedy union of the parts. But since Mr. MYNORS of Birmingham published a case, in which he laid down the scalp upon the dura mater, without any intervening dressings, I have several times, in favourable cases, followed this method with advantage; and have even united the divided integuments by stitches of the interrupted suture. But this method is not proper in all cases. Where the dura mater is lacerated, and portions of the brain are coming away, it must evidently do mischief. So also in fractures, where the termination cannot be ascertained, I should decline such a practice.

When

When I have attempted to bring about the adhesive process in the first instance, I have not been able to prevent some degree of suppuration; but if the wound had a depending orifice, the matter escaped between the stitches; and the divided scalp healed with a very narrow cicatrix. When the orifice of the wound has not been favourable for the issue of the purulent matter, an abscess has sometimes formed near the fracture; and has required an incision of the integuments. But this is a much less inconvenience than that of leaving the dura mater uncovered by the scalp, when it had lost its natural covering of bone. Most of the cases, in which I have used Mr. MYNORS's method, have been fractures of the os frontis.

Case 2.

The following Case affords an instance of the safety and advantage of this method.

CASE 3.

August 9th, 1800. I was called to the Son of THOMAS WOOD, of Birstal, aged ten years; who, by falling into a stone quarry the preceding evening, had fractured his skull. He had remained insensible since the accident.

There were two transverse fissures in the upper part of the os frontis, on the left side.

CHAP. I.

Case 3.

One of them was between two and three inches in length; the other was shorter. Just above these fissures the bone was depressed transversely about two inches, as if it had been struck with the edge of a stone. The bone was not broken where it was depressed; but was driven inwards, so as to form at the bottom a narrow furrow, or groove. With the straight-edged saw I cut through the bone at the bottom of the furrow, and also at the lowest fissure. I took away the intermediate bone; and then raised that portion of the cranium, above the furrow, which yet remained depressed. The dura mater was not injured. I drew together the integuments, and united them by the interrupted suture.

The boy was delirious and restless; frequently shouting during the operation. He had been bled by Mr. BOOTH, the surgeon, who was attending him. I directed a purgative to be given, and the saline draughts after its operation. I advised the application of a blister to his head, with bleeding by leeches, if the delirium should continue*.

11th. He was much better, but had not regained his understanding completely. He was

* These means were not used.

was more calm, and could give a rational answer sometimes to the inquiries made of him.

I did not visit him again, but was informed by his surgeon, that he soon regained his understanding; and was able on the 10th day after the operation to walk from his father's house, which was a public one, to that of a neighbour, to avoid the noise of a large company. Case 3.

The wound was healed on the 26th day after the operation.

CASE 4.

March 11th, 1808. JAMES DICKINSON, aged 12 years, was brought into the General Infirmary at Leeds, on account of a fracture of the upper part of the os frontis, by a fall of coal upon his head, while he was working in a coal-pit. Case 4.

The fractured part of the bone, which lay betwixt the horns of that portion represented in Plate 2. fig. 5. was depressed, and separated at its lower edge, from the remaining part of the os frontis. At this aperture a piece of coal had entered, and remained fixed betwixt the cranium and dura mater. After removing the depressed portion of bone, I took out the solid piece of coal, and also some powdered

CHAP. I. Case 5.

of the bone, below its transverse division, as rose above the level of the integuments. For I durst not use any means to depress this elevated part, because the orbitar processes were evidently shaken when pressure was made upon it.

In this part of the operation the small saws were eminently useful; as I could not have removed the projecting portion of bone by the trepliine, without manifest injury to the patient.

I united the integuments (of which no part had been destroyed) by the interrupted suture; and supported them besides with strips of adhesive plaster.

Notwithstanding the danger into which this child was brought by the extent of the fracture, his recovery proceeded in a favourable manner. He had no symptoms, after the operation, of injury done to the brain. The swelling, which immediately came on in the lower part of the forehead soon subsided; and a small abscess, which formed in the left eye-lid, about a week after the accident, healed speedily, after discharging the purulent matter by puncture. A watery fluid, sometimes limpid, issued from the wound, especially on the left side, so copiously, as to wet his

To face Page 23

PL. 2.

Fig. 1

his night-cap considerably. This discharge gradually abated, and ceased about the end of three weeks. The dura mater, at one place, shewed a tendency to form a fungous tumour; but it was soon repressed and obliterated by compresses of lint supported with plaster.

Case 5.

The healing afterwards went on as fast as could be expected, considering that the edges of the wound could not be kept in contact.

Fig. 1. in Plate 2. represents that portion of the parietal bone, which was removed by the circular saw, in the first of the preceding Cases. This fractured portion was considerably depressed from its circumference, where it remained attached to the sound part of the parietal bone. It was fissured also in various directions; and had a hole formed in it near its middle, where the letter *a* is placed. Before the Drawing was taken, (which is a mere outline) the bone was reduced to a flat state by pressure. An inspection of the figure will sufficiently demonstrate the great advantage of an instrument, which could remove such a broken piece of bone still adhering firmly at its circumference to the sound part, without any loss of sound bone, except a very small part at each extremity of the fractured

CHAP. I. Case 5.

portion. As it was necessary to bring the grooves, in which the saw moved, to a point, at each extremity of the fractured portion, the loss of a minute quantity of sound bone was unavoidable; but this was trifling, compared with the quantity destroyed at every operation, by the use of the trephine.

Fig. 2. represents the edge of a portion of the os occipitis, which it was necessary to remove in an extensive fracture of that bone, that passed across one of the lateral sinuses.

Not to enlarge at present upon the impossibility of removing so long a piece of bone with the trephine, without destroying a great deal of sound cranium, by the frequent application of that instrument; I shall only remark, that the annexed figure shews how difficult it would have been to saw out so unequal a piece of bone with the trephine, without injuring the dura mater. By means of the saws above represented, I took out this piece without the least injury to the lateral sinus. I used the straight saws till I had got through the thinner parts of the bone; and then divided the thick parts by means of the convex-edged saw, which will safely divide a narrow ridge of bone, as it does but touch the part with two or three teeth at once.

The

The letter *b* points out that part of the bone which covered the lateral sinus.

Though this instrument is principally useful in fractures of the skull, yet its use is not confined to such cases. It may be applied for the removal of bone under such circumstances as will not admit the use of a common saw. I found it to be a convenient instrument in one of the following cases of caries in the tibia; and have annexed two figures of the piece of bone, which it enabled me to remove, for the purpose of exploring a deep seated caries in the tibia of a young lady, whose case I shall relate.

Fig. 3. and 4. give an exterior and interior view of the wedge of bone, which was sawn out of the tibia of the young lady, whose case is related in the next article.

Fig. 5. gives the form and dimensions of that portion of the os frontis which was removed by the saw, in Case 4.

CHAP. II.

On CARIES *of the* TIBIA.

CASE 1.

CHAP. II. Case 1.

TOWARDS the conclusion of the year 1786, a young Lady from Richmond, in Yorkshire, consulted me, on account of a small tumour in the anterior and middle part of the tibia. It had exactly the appearance of a common node; and had such a degree of softness in its centre, that I apprehended a small quantity of fluid was contained in it; though that could not, from the thickness of the periosteum, be distinctly felt. The account which she gave me of her disorder was as follows.

In the preceding May she had a fever, which continued about four weeks; at the expiration of which, a violent pain began to affect her leg. The pain continued without intermission during six weeks, and then abated upon the appearance of a small tumour on the shin. She could then walk about with little or no uneasiness; but sneezing or coughing caused

caused a painful sensation in the tumour. She was, in other respects, in perfect health.

CHAP. II.

I recommended the trial of some means to effect the dispersion of the tumour; and with this view I directed Plummer's pill, with the decoction of Mezereon; and applied mercurial ointment to the part, covering the tumour, in the intervals of this application, with ceratum saponis. By the use of these means, the tumour became less, and the uneasiness was diminished; so that the young lady thought herself nearly well. But before the expiration of winter the tumour began again to increase in bulk; and in the summer 1787, she returned to Leeds to put herself intirely under my care.

Case 1.

The tumour was then larger and softer; and there remained not the least hope of curing my Patient without discharging the matter, and afterwards treating the case as the state of the periosteum and tibia might require.

Upon laying open the tumour, I found the periosteum diseased, and thickened; separated from the tibia, and including a small quantity of purulent matter. The surface of the tibia was rough, as far as the matter had covered it; and in the centre of the rough part there was a hole equal in bore to a goose's quill,

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direction of the bone. It was now clear that

the bone was affected with an internal caries;

but it was impossible to ascertain the extent

of the caries by such an examination.

Nothing now remained to be done, which could afford a rational hope of curing this

disease

disease, except amputation of the limb; or an attempt to explore fully the extent of the internal caries, and to remove the diseased part of the bone. I explained the case fully to my Patient, who submitted intirely to my judgment the means to be used for her recovery. She had apparently a good constitution; and, excepting the caries of the bone, was in perfect health. I determined therefore to avoid, if it were possible, disfiguring my Patient by an amputation. I was satisfied that she would not reproach me on account of my ineffectual endeavours to preserve her limb, if my attempt to remove the diseased part of the bone should prove unsuccessful.

I began the operation by dissecting off the granulations of flesh which had arisen from the bone; and then sawed out, by means of a circular headed saw, a wedge of the tibia two inches in length, which I had previously marked at each extremity of the longitudinal cavity in the bone. This wedge was half an inch in breadth, and a quarter of an inch in thickness; and consisted intirely of the laminated part of the bone. The removal of this portion of the tibia brought to view a caries of the cancelli, almost as extensive as the length of the piece which I had sawed out. With

different

CHAP. II.

Case 1.

different trephines, suited to the breadth of the caries, I removed the diseased cancelli of the bone quite through to the opposite lamella; as this part of the bone was carious throughout its whole thickness.

As the caries extended itself in various directions, it was not possible to remove the whole of it with a trephine, without removing also a large portion of the sound part of the bone. But this I wished to avoid as much as possible. By the assistance therefore of a strong sharp-pointed knife, I pursued the caries in every direction, until I had removed every part which had an unsound appearance.

This operation took up more than two hours: yet the young lady bore it with the utmost patience and fortitude. I dressed the cavity in the bone, and the rest of the wound, with dry lint, in the most simple manner. The whole surface was speedily filled with good granulations; and a complete cure was obtained without any exfoliation.

The limb which was diseased has now as much strength as the other; and no uneasiness is produced even by violent exercise.

REMARKS.

REMARKS.

Upon a review of this case, I am inclined to think, that an abscess was formed within the tibia, in consequence of the fever which she had in May 1786. During the continuance of the fever, she had no particular pain in her leg; but upon the decline of the fever the pain commenced, and continued violent for six weeks. It seems most probable, that during this time the matter was making its way through the anterior lamella of the tibia; and that the pain abated soon after the matter had perforated the bone; for it ceased immediately upon the appearance of a tumour on the shin. It is surprising that such a perforation should have been made through so firm a part of the bone, without any extensive caries in the lamella; especially as the lamellated part of the tibia was remarkably firm and thick. The perforation appeared as if it had been made with a gimlet. The pain was so great during this operation of nature, that my Patient assured me, and that immediately after the removal of the carious part of the bone, that she had suffered more pain during the whole of the six weeks above mentioned, unless when she was asleep, than I had

CHAP. II.

caused during the operation necessary for removing the unsound bone.

CASE 2.

Case 2.

HANNAH CROFT, a stout young woman, aged 15, was admitted an in-patient of the General Infirmary at Leeds, in the beginning of the year 1792. She had a scabby eruption on one of her hips, and a small ulcer in the leg. As the ulcer shewed no granulations of flesh, yet discharged daily a quantity of purulent matter, I examined it with a probe, and found that the bone was carious beneath. Upon pressing the integuments, which surrounded the ulcer, against the tibia, I could distinctly feel a roughness in the bone, extending to the breadth of a shilling; with a depression in the middle of the rough part. I divided the integuments as far as this roughness extended; and found a circular portion of the tibia to be carious, and to have a hole in the middle of it, out of which issued purulent matter. The Patient had felt very little pain in her leg previously to her admission into the Infirmary; and when first admitted took little notice of the ulcer in her leg.

I thought it advisable to treat this Patient in the manner which had proved so successful

in

in the preceding case; and, having divided the integuments upwards and downwards, until the whole of the caries was exposed, I proceeded to remove the diseased parts of the bone. CHAP. II. Case 2.

I first took away the central part, where the abscess was formed in the tibia, by the help of a trephine. The lamellated part of the bone, surrounding the hole out of which the matter chiefly issued, was in this case carious; but the disease did not run deep into the cancelli of the bone. Above, and below, this central part, the caries seemed to be intirely confined to the lamella; and extended, in the whole, about six inches. After sawing out, with the trephine, the part principally affected; I removed the rest of the caries with sharp gouges, cutting off every portion of bone which had a morbid appearance.

The operation was tedious, but amply repaid my Patient for the pain which it gave her, by the preservation of her limb. The diseased parts of the bone were so completely removed, that there was not the least exfoliation during the progress of the cure; and the wound was intirely cicatrized at the expiration of ten weeks.

CHAP. II.

CASE 3.

Case 3. WILLIAM DEWS, of Horbury, aged 25 years, was admitted into the General Infirmary at Leeds, May 16th, 1804, on account of a caries in the upper part of the tibia of the right leg.

He had been informed by his mother, that, when he was three years old, this leg became affected with an extensive inflammation; which was followed by the discharge of small pieces of bone: but the sores were healed in about half a year. From this time his leg continued sound till he was 17 years of age. He then happened to receive a blow upon the upper part of the shin; and, about six months after this accident, an abscess was formed upon the part which had been struck. The sore was healed in the course of a few weeks; but he continued from that time, to be subject to the formation of matter in the injured part almost every year; and generally twice in the year. He did not recollect, that any of these attacks had been followed by exfoliation of bone.

May 20th. I made an incision, about five or six inches in length, through the integuments which were diseased, and which covered the

CHAP. II.

Case 3.

the carious part of the bone. I then separated them from the bone, that the extent of the caries might be fully discovered. The lamella of the tibia was carious about two inches in length from the bottom of the wound. This I removed, by means of small chisels; together with the cancelli of the bone, which were also carious. The lamella above this part appearing sound, though the cancelli were in a morbid state, I did not make any division of the former; but only scooped out the latter for about two inches higher in extent, which was as far as the cancelli appeared to be in a diseased state. The cavity extended obliquely upwards, as far as the tubercle of the tibia; verging inwards as it ascended.

The successful termination of some former cases, in which the removal of the diseased cancelli, without destroying the sound lamella, had made a perfect cure, led me to hope, that this operation would prove effectual.

A part of the morbid integuments sloughed off; but the process of healing was not, in other respects, very unfavourable. At the expiration of eighteen weeks, the cavity left by the removal of the cancelli was filled up, and the wound was nearly cicatrized. A fresh abscess then took place; and, upon examina-

CHAP. II.

tion with a probe, I found the bone, at the superior part of the sore, to be carious.

Case 3.

I was obliged, therefore, to perform a second operation; and now determined to leave no morbid part concealed. I laid open, by two applications of the trephine, all that part which I had left hollow at the former operation: and then, partly by sawing off the edges of the lamella, and partly by removing them with chisels, I reduced the depth of the cavity, and exposed every part of it to view.

The cavity in the tibia, after this second operation, was four inches in length, and an inch and half in breadth: and no portion of bone remained that had the least appearance of disease.

The cavity was soon filled with good granulations: and, at the expiration of eighteen weeks, was cicatrized with as even a surface, as if no part of the bone had been removed.

Where the extent of the caries is not so great as to prevent a complete removal of the morbid part, this method is extremely useful, and far superior to the use of the potential, or actual, cautery.

When the diseased portions of lamella and cancelli are removed, granulations of flesh will soon

soon arise from the sound parts of the bone, and become united with the integuments, which ought to be preserved as far as possible.

A Caries of the Os Calcis, which does not affect the bone to a great depth, may be treated in the same manner with success. Of this, several instances have occurred in the Leeds Infirmary, since the first edition of this Work was published. We have taken off a considerable portion of this bone, without injuring the attachment of the tendo Achillis, or preventing the patient from walking with firmness after the cure.

In a few instances, where the caries was deep, and the habit of the patient unfavourable, the disease became extended after the operation, and this treatment failed of its usual success.

In one Case under my care, the wound in the integuments became stationary, after it had been reduced to a small compass; and for many weeks shewed no disposition to heal. Suspecting this failure to arise from something morbid in the state of the bone, though no part of it could be felt through

CHAP. III.

and fibula; and had made a deep wound, in which, without dilatation, the bleeding vessel could not be discovered; recommended a removal of the Patient to the General Infirmary.

24th. I saw the Patient with Mr. LOGAN. The wound was then plugged up by pieces of sponge, which the House Apothecary had applied, upon an appearance of returning hæmorrhage. There was at this time no bleeding: and the leg being in an inflamed state, we judged it best to apply a mild poultice, and to defer an enlargement of the wound till the inflammation should have ceased.

July 1st. The hæmorrhage returned, but was immediately checked by the application of a tourniquet. Mr. LOGAN called a consultation of the surgeons; and as the inflammation of the leg had now ceased, it was determined to make an attempt to secure the bleeding vessel. After the removal of the sponge, the wound was carefully examined. It admitted a finger to pass readily betwixt the tibia and fibula, to the inner side of the tendo Achillis; at which place the wound approached near the skin. As it was impossible to discover the wounded vessel through the orifice at which the pick-axe had entered, it was thought

thought proper to make a wound on the back part of the leg by the side of the tendo Achillis, where the integuments felt thin. Upon slackening the tourniquet, the blood gushed out at both the wounds; and appeared to flow from a vessel so deeply seated, that there seemed to be no hope of discovering and securing it, either by means of an enlargement of the original wound, or of that just made at the inner side of the tendo Achillis. In this dilemma it occurred to me, that the late Mr. GOOCH had proposed the removal of a portion of the fibula, in such a case as the present, to prevent the necessity of amputating the limb. I mentioned this thought to my Colleagues, who approved of the proposal; and the operation was immediately performed by Mr. LOGAN.

After making a proper division of the integuments, the peronæi muscles were separated from the bone sufficiently to admit of the removal of a piece two inches in length. It was impossible to perform this part of the operation with a common saw, without cutting through the peronæi muscles. The use of a trephine would have left four sharp projecting points of bone, which would have required the assistance of the strong bone nippers.

But

CHAP. III.

But the saws above described took off the bone without injury to any of the contiguous soft parts, and without leaving any projecting point of bone.

The fibular artery was protected, during the act of sawing, by the introduction of a piece of tin-plate behind, and in contact with the fibula.

The removal of the bone gave us a complete view of the wounded artery, in which a hole had been made by the point of the pick-axe, at the distance of three inches above the joint of the ancle. The vessel lay at the bottom of the wound, the leg being placed on its inner side with the fibula upwards. It was tied both above and below the orifice: and after the divided integuments were in part united by sutures, the leg was placed in a fracture box.

The Patient recovered without any bad symptom.

CHAP. IV.

On the CATARACT.

THE term *Cataract*, when applied to the eye, is usually defined to be, *an opacity of the crystalline humour, or its capsule.* This definition gives a just idea of the nature of the disease; but leads to an incorrectness in language, when speaking on the subject. *Opacity* being only a quality of the crystalline, cannot be depressed or extracted. It is the crystalline itself, or its capsule, that is the subject of operation. We ought, therefore, to say, that the term *cataract* either expresses an opacity of the crystalline, or the crystalline itself in an opake state. After this definition, we can speak with propriety of breaking, depressing, or extracting, a cataract.

Having been led to prefer the mode of depression, I shall lay before my reader such observations on that method of operating, as my practice has enabled me to make; and shall subjoin a few Cases to illustrate these observations. These, I hope, will not be altogether

CHAP. IV.

altogether useless to those practitioners who may choose to operate after this method.

Before I enter upon these observations, it may not be amiss to make a few anatomical remarks on the structure of the Eye, as far as relates to the operation of *couching*. These are the more necessary: as some of the latest and best writers on the operation have delivered opinions, or directions, inconsistent with the structure of the eye.

A surgeon, who undertakes this operation, ought to have a clear idea of the structure and situation of the crystalline humour, and its capsule; of the iris; and also of the manner in which that part of the eye, called its *posterior chamber*, is formed.

The crystalline may be considered as consisting of two plano-convex lenses, of unequal bulk and convexity, joined together by their flat surfaces. The larger and more convex part of the crystalline lies sunk in a cavity formed in the anterior part of the vitreous humour; while the smaller and less convex portion projects a little before the anterior surface of that humour. That part of the crystalline, which may be considered as the place where these two unequal portions unite, lies contiguous to the brim of the cavity formed

formed in the vitreous humour. From this brim goes off the capsule which covers the anterior part of the crystalline. And although the posterior portion of the crystalline is also inveloped by a capsule; yet it is this anterior covering chiefly, which, in speaking of the cataract, is denominated its *capsule*.

The crystalline humour is of firm consistence at its centre; but becomes gradually softer towards its circumference, where it approaches nearly to the state of a fluid. The centre of the crystalline is situated in its posterior portion.

That part of the iris which lies between the ciliary ligament and the crystalline, is covered on its posterior surface with thick projecting folds or plaits, called the *ciliary processes*. These processes adhere slightly to the anterior part of the vitreous humour, by the intervention of a black substance (immediately to be described), in their course from the ciliary ligament to the brim of that cavity in which the crystalline lies. At this brim they terminate, where they are attached to the circumference of the capsule of the crystalline. The remaining part of the iris lies loose before the crystalline, and at a very small distance from it: a minute quantity of the

aqueous

CHAP. IV.

chamber, are the same; consequently that it is impossible to depress the crystalline in the posterior chamber *.

When they speak of introducing a broad couching needle into the posterior chamber of the eye, they seem to forget that the iris and crystalline are nearly in contact with each other. If the cutting edges of the spear-shaped needle are placed horizontally in the posterior chamber, for the purpose of depressing the cataract, the anterior edge must wound the iris; unless it be placed directly opposite the pupil, where the iris is deficient. The point of a needle, which has penetrated the coats of the eye behind the ciliary ligament, cannot be brought into the posterior chamber without passing through the crystalline, or separating a portion of the ciliary processes

* If all that part of the eye which lies behind the iris be called the *posterior chamber*, the cataract may then be said to be depressed in that chamber; but this is not the proper anatomical meaning of the term; which signifies, as WINSLOW has observed, a subdivision of that part of the eye occupied by the aqueous humour.

"On donne le nom de chambres de l'humeur aqueuse à ces deux espaces, & on les distingue par rapport à la situation, en chambre anterieure & en chambre posterieure.——La posterieure, qui est cachée entre l'uvée le crystallin, est fort etroite," &c.

processes from their attachment to the anterior surface of the vitreous humour. But the needle will become visible to the operator, even in a cataractous eye, before it has entirely passed through the crystalline; for, that being generally rendered opake only in its central part, the needle becomes visible as soon as it has passed this part, if the capsule remains transparent. CHAP. IV.

When the crystalline humour becomes opake, the central part seems always to be the first affected. From the centre the opacity extends in all directions towards the circumference; but rarely, if ever, reaches the circumference. For if that were the case, unless the capsule contained a transparent fluid surrounding the crystalline, a mere opacity of this humour would be sometimes attended with total blindness, which, I believe, never happens without some other morbid affection of the eye. The ciliary processes advance on all sides as far as the circumference of the crystalline; therefore no rays of light can fall upon the retina without passing through the crystalline.

I cannot take upon me to say, whether there is, or not, in the human eye during life, a minute portion of transparent fluid, sur-

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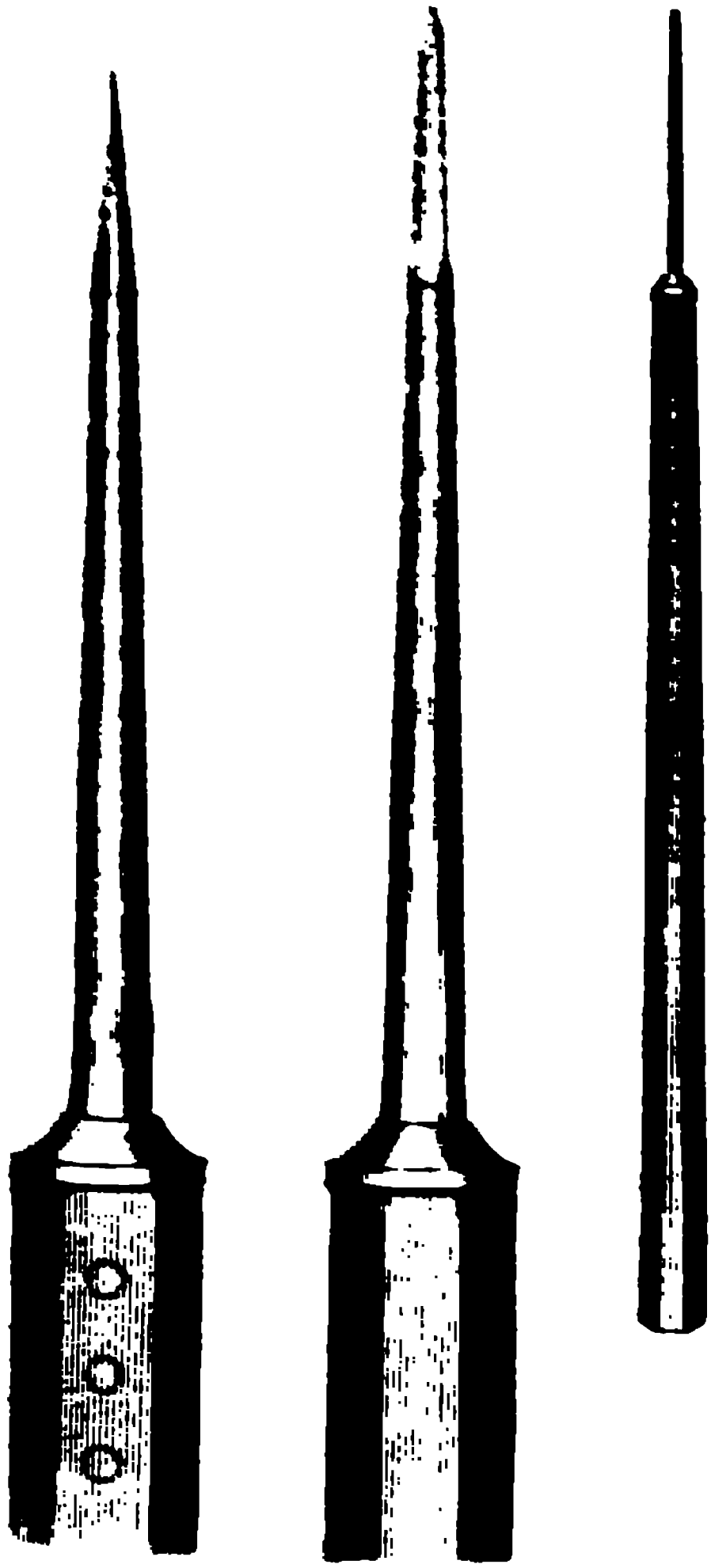
rounding the crystalline humour, and contained within its capsule, through which the most oblique rays of light may pass: but this consideration may be neglected; and we may speak of the crystalline as filling the capsule, without incurring any practical error.

In the operation of couching, the crystalline lens can only be moved into some part of the vitreous humour, different from that in which it is naturally situated; unless it is brought into the anterior chamber. It cannot be lodged *beneath* the vitreous humour; for that humour is every where in contact with the retina, and fills up the posterior cavity formed by the coats of the eye.

As the Needle, which I now use in the operation of *couching*, differs somewhat from any that I have *seen*; and appears to me to possess some advantages over the spear-shaped needle, which is most commonly used; I have given a figure of it, both in its natural size, and also when magnified for the purpose of seeing its parts more distinctly*.

The

* In 1768, I had an opportunity of seeing several operations performed by Dr. HILMER, an itinerant oculist. He made use of a small round needle, which appeared to me superior in point of safety to the common one,



CHAP. IV.

The length of the needle is seven-eighths of an inch. It is round, except near the point, where it is made flat by grinding two opposite sides. The flat part is ground gradually thinner to the extremity of the needle, which is elliptical, and ought to be made as sharp as a lancet. The flat part extends in length about an eighth of an inch, and its edges, as far as the point, are parallel. From the place where the needle ceases to be flat, its diameter gradually increases towards the handle. At the flat part the needle is one-fortieth of an inch in diameter. At that part which is nearest to the handle one-twentieth. The handle, which is three inches and a half in length, is made of light wood, stained black. It is octagonal, and has a little ivory inlaid in the two sides, which correspond with the edges of the needle.

The advantages which this instrument appears to me to possess, above the common spear-shaped needle, are these:

1. It is only half the length of the common needle; and this gives the operator a greater command

one, which is larger, and made with a spear-shaped extremity. I immediately adopted the form of his instrument; making such alterations in it afterwards, as I judged likely to increase its utility.

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command over the motions of its point, in removing the crystalline lens from its bed, and tearing its capsule. It is also of some consequence, that the operator should know how far the point of his needle has penetrated the globe of the eye, before he has an opportunity of seeing it through the pupil; as it ought to be brought forwards when it has reached the axis of the pupil. Now he may undoubtedly form a better judgment respecting this circumstance, when the length of his needle does not much exceed the diameter of the eye; than when he uses one of the ordinary length, which is nearly two inches. The shortness of the needle is peculiarly useful; when the capsule is so opake, that the point cannot be seen through the pupil.

2. As this needle becomes gradually thicker towards the handle; it will remain fixed in that part of the sclerotis to which the operator has pushed it, while he employs its point in depressing and removing the cataract. But the spear-shaped needle, by making a wound larger in diameter than that part of the instrument which remains in the sclerotis, becomes unsteady; and is with difficulty prevented from sliding forwards against the ciliary processes, while the operator is giving it

those

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those motions which are necessary for depressing the cataract.

On the same account, the common spear-shaped needle may suffer some of the vitreous humour to escape during the operation; whereby the iris and ciliary processes would be somewhat displaced, and rendered flaccid: whereas the needle which I use, making but a small aperture in the sclerotis, and filling up that aperture completely during the operation; no portion of the vitreous humour can flow out, so as to render the iris and ciliary processes flaccid.

3. This needle has no projecting edges: but the spear-shaped needle, having two sharp edges, which grow gradually broader to a certain distance from its point, will be liable to wound the iris, if it be introduced too near the ciliary ligament with its edges in a horizontal position. I have been informed, that, in an operation performed by one of the most eminent surgeons in the metropolis, now deceased, the iris was divided as far as the pupil. If the operator, in order to avoid this danger, introduces his needle with its edges in a vertical position, he will divide the fibres of the sclerotis transversely; and, by thus enlarging the wound, will increase the unsteadiness of

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the instrument. Besides, however the needle be introduced, one of its sharp edges must be turned towards the iris in the act of depressing the cataract, and, in the various motions which are often necessary in this operation, the ciliary processes are certainly exposed to more danger, than when a needle is used which has no projecting edge.

4. It has no projecting point. In the use of the spear-shaped needle, the operator's intention is to bring its broadest part over the centre of the crystalline. In attempting to do this, there is great danger of carrying the point beyond the circumference of the crystalline lens, and catching hold of the ciliary processes, or their investing membrane, the *membrana nigra*. This accident is the more probable, as the point of the needle must unavoidably be directed obliquely forwards: and this motion, if carried too far, brings the point into contact with the ciliary processes, as they surround the capsule of the crystalline.

A needle, made according to the figure given in the annexed Plate, will pass through the sclerotis with ease. It will depress a firm cataract readily; and break down the texture of one that is soft. If the operator finds it of use to bring the point of the needle into the anterior

anterior chamber of the eye (which is often the case), he may do this with the greatest safety; for the edges of the needle will not wound the iris. In short, if the operator, in the use of this needle, does but attend properly to the motions of its point, he will do no unavoidable injury to the eye; and this caution becomes the less embarrassing, as the point does not project beyond that part of the needle by which the depression is made; the extreme part of the needle being used for this purpose.

The appearance of a cataract has been so often described, that I shall not trouble my readers with a repetition of the description. A careful surgeon, who understands the anatomy of the eye, will not often mistake this disease. There is, however, one state of the eye, which may lead an experienced practitioner into doubt; or may even cause him, without the greatest circumspection, to form a wrong judgment. In some persons, that part of the eye which is seen through the pupil does not appear black as usual; but has a grey appearance, or is of a dark pearl colour. This is so like the appearance of an incipient cataract, that, if the sight of the person is

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diminished, a surgeon may be induced to form a wrong prognostic. The appearance which I have described occurs in one species of amaurosis, to which persons advanced in age are particularly subject. It occurs also in some middle aged persons whose sight is defective. In examining attentively the eyes of such persons, one may observe, that the part which puts on a greyish cast is situated at a greater distance behind the pupil than an incipient cataract: and that it has a more polished or shining appearance.

We have no certain criteria by which it can be known, previously to an operation, whether a cataract is soft or hard *. Those proposed for consideration by Mr. POTT † are not to be relied upon. Some of the most firm cataracts, which have occurred in my practice, were neither formed hastily, nor preceded by pain in the head. On the other hand, two cataracts, which came on the most rapidly of any that I have seen, and which seemed to have been formed almost instantaneously, were found to be soft. The subject, in one of these cases, was a married woman, who had enjoyed perfect

* I have generally found a dark coloured cataract in old persons to be of a firm consistence.

† POTT's Chirurgical Works, 8vo. vol. iii. p. 222.

fect sight until the time of her fifth labour. Immediately after her delivery she became sensible of a considerable defect in her sight, and could afterwards discern no object distinctly. Soon after she had got abroad, her husband brought her to Leeds, and consulted me. I found a cataract formed in each eye; and, upon operating a short time afterwards, the cataracts were found to be uniformly soft. CHAP. IV.

When a cataract is complicated with a complete amaurosis, or a total opacity of the cornea, the removal of the diseased crystalline must be fruitless. But in partial affections of the eyes from these complaints, a patient may receive such a degree of sight from an operation as yields much comfort; though it falls short of distinct vision. An universal adhesion of the iris to the capsule of the crystalline argues such a morbid state of the eye, that an operation cannot be undertaken without considerable doubt respecting the event; though the operation is not hereby rendered wholly improper. In this case, the iris shews no motion upon a sudden exposure to light, the pupil usually remains contracted, and is often irregular in its form. I have repeatedly operated with success where the adhesion was partial, by proceeding with great caution. In

this

CHAP. IV.

this case the pupil is contracted and dilated, by varying the degree of light thrown upon the eye. Sometimes when the pupil is circular in a strong light, it will, when dilated in an obscure light, assume an irregular form, and thereby point out the situation and extent of the adhesion.

Though it would be improper to perform the operation of couching, when the eye is in a state of inflammation; yet persons affected with the Lippitudo bear the operation much better than one would expect from the appearance of the eyes in that disease. I have never rejected a patient on this account; but have repeatedly operated with success, and with very little subsequent inflammation, when numerous vessels of the conjunctiva were turgid with blood, and the eye-lids thickened, provided this state of the organ was habitual.

I do not recommend an operation, if the disease is confined to one eye, while the sight of the other eye remains perfect. Nor am I hasty in recommending the operation in cases of cataract from external injury, as blows, or punctures of the cornea; having been led from experience to form the same opinion of the disease, when originating under such circumstances, which the late Mr. POTT entertained.

tained *. I apprehend that, in such cases, the capsule of the crystalline lens is generally the seat of the disease; and I have had the pleasure of seeing the opacity disappear gradually, without the use of any other means than those which were proper for removing the inflammation. Such an event, however, does not always follow; and sometimes where the sight is ultimately restored without an operation, the restoration advances by very slow degrees. My late colleague at the General Infirmary, Mr. LUCAS, relates a case † in which "the "opacity began to dissipate in a month" after the accident, which was a blow upon the eye; "and in three months the patient could see "with that near as well as the other eye." I have seen two cases, where the opacity continued a year before the natural transparency of the capsule began to be restored. In one case of this kind which I saw, the patient had been blind of the injured eye four years before the opacity began to disappear.

When the cataract is *congenital*, the eyes have often an irregular motion, as if the patient was looking at two distinct objects at the same time. The operation is rather more difficult

* POTT's Chirurgical Works, 8vo. vol. iii. p. 230.

† Med. Obs. and Inquiries, vol. vi. p. 264.

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difficult in such patients, on account of the unsteadiness of their eyes; but it may be performed with safety, when the patient is so far advanced in years as to understand the design of the operation, and has been taught to desire it. The infantile state is now found to afford no impediment to this operation, provided the child is placed in a horizontal position, and is securely held by proper assistants. The globe of the eye should be gently pressed by PELLIER's speculum, at the moment of making the puncture.

The habit of persons afflicted with cataracts is so different, that no general rule can be laid down respecting the manner of preparing a patient for the operation. In some cases, the loss of a little blood may with propriety be added to laxatives, and a strict regimen. In other cases, there may be such constitutional debility as to forbid any reduction. In general, I do but require my patients to abstain from animal food and fermented liquors for a few days; and give one dose of a gentle purgative.

DURING the *operation*, the patient should be seated on a chair somewhat lower than that which the operator sits, that the arm of the

the operator may not be much elevated. An elevated position of the arm soon produces fatigue, and renders the hand less steady. The eye of the patient should be exposed to the light of one window only, and that should admit no more light than is necessary for seeing the interior parts of the eye distinctly. If the patient's head is placed a little obliquely to the light, the picture of the objects reflected by the cornea (which often prevents a distinct view of the cataract) is thrown to one side of the pupil, and then creates no impediment to the operation. A horizontal light is in this operation preferable to a sky-light. The head of the patient must be kept erect, or inclined a little forwards, by an assistant who places one hand upon the forehead, and another under the chin; supporting, at the same time, the occiput by a pillow interposed between it and the breast of the assistant. The eye which is not the immediate subject of the operation, should be kept steady by a proper bandage, and by a gentle pressure from that hand of the assistant which is placed upon the forehead. The speculum oculi of PELLIER is a convenient instrument, in the hand of an assistant, for supporting the upper eye-lid; while the lower eye-lid is depressed by one or

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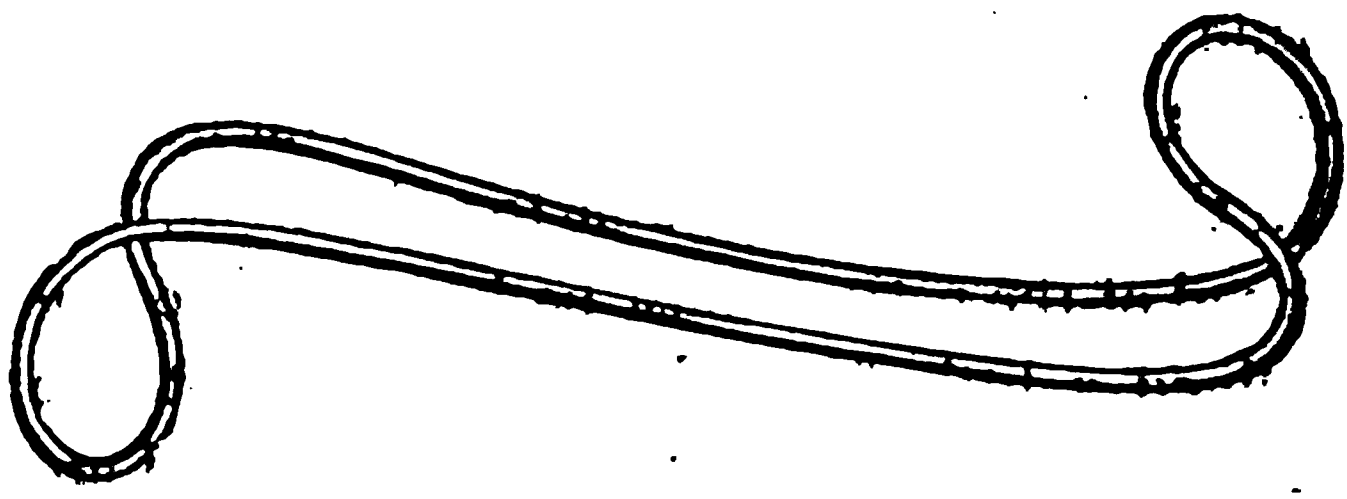
two fingers of that hand of the operator which does not hold the needle. See the Figure below. The patient should be directed to turn his eye inwards, as if he were looking at his nose; that the part in which the puncture is to be made may present itself to the operator, and that the conjunctiva may be put upon the stretch. If the conjunctiva remains wrinkled where the needle enters the eye, the operator will find his instrument so entangled as greatly to impede the regularity of its motions.



The needle, being besmeared with oil, should be pushed suddenly through the coats of the eye. The direction in which this is done is of some consequence; especially if a spear-shaped couching needle is used. The needle should not be pushed through the sclerotis in a direction parallel to the iris: for pressure made in that direction is apt to give a rolling motion to the eye, and thereby alter the course of the needle. If the eye be made to roll towards the nose, the point of the needle will

will then be directed towards the iris; and the operator will be in danger of wounding it. This danger may be avoided by piercing the sclerotis with the point of the needle directed towards the centre of the eye. By this method the eye is rendered steady; and the needle will pass through its coats without any danger of wounding either the iris or ciliary processes.

The operator should rest his hand upon the cheek of the patient, while he is piercing the cornea, and removing the cataract. This position gives great steadiness to the hand, and prevents embarrassment from any slight motion of the patient's head, as the hand thus placed preserves its relative position with respect to the eye. But the operator should not, with the hand which holds the needle, touch the lower eye-lid, as that is often affected with an involuntary quivering motion during the operation, and would thereby render the hand unsteady.

When the needle has pierced the coats of the eye, it must be pushed forwards in the same direction; till so much of the instrument is introduced, that its point, when brought forwards, will reach the centre of the crystalline. This part of the operation, as I have already

may be performed with
the use of a short needle.
needle is little more than
eye; the operator will be
edging when the point of
advanced to the axis of the
ponds with the centre of the
absolutely necessary, that
be introduced at one deter-
behind the ciliary ligament.
of steadiness in the eyes of
renders this impracticable: but
distance of about one-sixteenth
be the most convenient. The
may be performed with greater ease
when the needle pierces the sclerotic
greater distance from the ciliary
ligament.

But the operation must be conducted in the same manner, whatever be the state of the cataract. The remaining part of the operation must be varied according to the circumstances of the disease.

If, in bringing forwards the point of the
e, I perceive the cataract to advance, and
the pupil; I then know that the cataract
, and that the needle is in contact with
terior part. The pressure, used in bring-
ing

ing forwards the cataract, sometimes causes the point of the needle to sink so far into the crystalline, and to become so much entangled in its more tenacious part, that the depression may be completed though the instrument has not been seen through the pupil. When, therefore, the appearance which I have mentioned takes place, I do not persist in bringing forwards the point of the needle, lest the iris should be injured by the too great dilatation of the pupil; but I depress the point, and at the same time carry it backwards. If this motion of the needle removes the cataract from its place, and leaves no appearance of an opake capsule, the operation is usually concluded without any further trouble.

If the cataract does not follow the motion of the needle, I cautiously bring forward its point through the softer part of the crystalline, till I can see my instrument through the pupil, endeavouring at the same time to pierce the capsule; and then proceed in my attempts to effect the depression. In these attempts I always move the needle backwards as well as downwards; for the operator ought always to be sure, that his needle is behind the ciliary processes, when he moves it upwards or downwards. Before I withdraw the needle, I usually

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elevate its point a little, to see whether the cataract rises again when the pressure is removed. If it does, the pressure is renewed once or twice; and the needle is then withdrawn. I always endeavour to lodge the cataract below the place where my needle entered the vitreous humour; and withdraw the needle in a direction nearly parallel with the axis of the pupil.

Though I do not think it advisable to persist in pressing an entire cataract into the anterior chamber, when the advance of the cataract causes a large dilatation of the pupil; yet after the needle has wounded the capsule, a firm cataract, or at least its nucleus, will sometimes slip through the pupil without the design of the operator. This has been considered by some authors, as a disagreeable circumstance, and has been ranked amongst the objections to the operation of couching*. On the contrary, it ought to be considered as a favourable event, if the opake portion is not large; since it will then generally dissolve, in the aqueous humour, and finally disappear without any injury to the eye. This, at least,

* Memoires de l'Academie de Chirurgie, tom. ii. 579. WARNER's Cases, ed. 3. p. 76—92. Bar. WENZEL.

least, has been the event in every case of the kind which I have seen. I have six or seven times seen an opake nucleus fall into the anterior chamber of the eye, and very frequently small opake portions; but the sight in all these cases was restored by the dissolution of the cataract.

If the opake portion is large, it may be the most prudent method to extract it by a division of the cornea; though in some of the cases to which I allude, the opake nucleus was of such a size as to hide the pupil from view till the dissolution began to take place.

After the crystalline has been depressed, if the least degree of opacity appears in the capsule, it ought not only to be pierced with the needle, but removed as far as is possible; avoiding long continued efforts, as these are more dangerous than a repetition of the operation. It is often necessary, for the purpose of piercing or removing the capsule, to bring the point of the needle through the pupil; but this may be done with safety. The operator should, however, be cautious not to touch the posterior surface of the cornea.

If the crystalline, or rather its capsule, is found to adhere in part to the iris, great caution should be used in our attempts to destroy

[illegible] is it is much more safe to [illegible] operation after a gentle attempt, [illegible] continuing the use of force, to risk [illegible] of an inflammation. It is useful [illegible] up the cataract with the [illegible] elevation may be successful, where [illegible] has failed. Mr. WARNER succeeded at the fourth operation, in destroying [illegible] adhesion of the iris *; and I have repeated the operation oftener than four times with advantage, rather than incur the hazard of inflammation, which might have left my patient [illegible] blindness †.

Hitherto the cataract has been considered as firm, and capable of bearing the pressure of the needle; but, in the greater number of cases which have fallen under my care, the cataracts have been found so soft as to permit the needle to pass through them in all directions. In this state of the disease, I do nothing more than break down the texture of the cataract; and endeavour to puncture or tear off a portion of, the capsule, that the aqueous humour may flow in upon the broken cataract. In doing this, it is common to see some fragments of the cataract fall, through the

* WARNER's Cases in Surgery, ed. 3. p. 62.

† Cases 3. & 4. pp. 84. 87.

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the pupil, into the anterior chamber of the eye. I am always glad to see this take place; as I then know that there is a passage opened for the admission of the aqueous humour; and that those opake fragments, which have passed through the pupil, will soon disappear.

Sometimes the cataract is so uniformly soft, that the passage of the needle through it makes no alteration in its appearance. This species of cataract was considered by Mr. SAMUEL SHARP and Mr. WARNER as incurable *. In this opinion these excellent authors were certainly under a mistake; for I find that although an uniform softness of the cataract may require a more frequent repetition of the operation, it affords no permanent impediment to the cure. Upon repeating the operation in such cases I have often found, that the first operation had produced more effect than at the time of operating it appeared to produce. The cataract, upon a subsequent operation, appears more broken, and irregularly opake. Some portions may now be removed, which before appeared immovable; some fall into the anterior chamber; and the remainder

* SHARP's Operations of Surgery, ed. 7th. 163—165. WARNER's Cases in Surgery, ed. 3d. p. 73.

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remainder becomes gradually dissolved in its original situation.

A soft cataract has in some respects the advantage over a hard one, as the former is less apt to adhere to the iris; and consequently, there is less risk of deranging the ciliary processes, or their investing membrana nigra, by breaking down a soft cataract, than by removing a hard one.

When both eyes are affected with a cataract, I have usually operated upon them both at the same time: but I have not uniformly adhered to this method.

I always operate upon the right eye with my left hand. A surgeon may easily acquire the power of using his left hand in this operation, if he accustoms himself to bleed with the left hand, whenever a proper opportunity offers.

After the operation, I cover both the eyes, though one only may have been couched, with a broad piece of linen, spread with unguentum ceræ, and fastened to a ribbon tied round the head. The patient's face should not be exposed to a strong light, nor to the heat of a fire, till the tenderness of the eyes is gone off. A strict regimen should be observed for a few days; and

and a gentle laxative may usually be given with advantage. CHAP. IV.

WHEN the nature and variety of the parts wounded in couching are considered; a person not accustomed to this operation might reasonably conclude, that it would usually be followed by a considerable degree of inflammation. Yet I can with truth assert, that, when it is performed in the manner above described, this is not the usual consequence. Frequently the eye appears as free from inflammation as it did before the operation, excepting a slight redness in the conjunctiva, where the puncture was made. Nor is the operation itself attended with that degree of pain which one might reasonably expect. It is commonly spoken of by the patient as inconsiderable. A Lady, whom I couched in this town, was asked by her daughter, immediately after the operation, what degree of pain she had felt. Her reply was this: "I expected to have felt "an acute pain, though of short duration; "but I did not. I only felt as if something "was pressing against my eye."

Though the inflammatory affection, which is immediately subsequent to the operation, is generally slight; yet it must be confessed, that

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it is sometimes considerable; and I have also observed, that the patient's eye is more susceptible of inflammation, from any irregularity, for two or three weeks after the operation. Some of the worst attacks of inflammation, which I have seen, have come on at so distant a period; when the patient, presuming upon the comfortable state in which he found himself, has incautiously exposed his eye to a cold blast of air, or has caught cold by any other means.

In case of subsequent inflammation, I place the greatest dependance upon the evacuation of blood, especially from some branch of the temporal artery. The quantity and frequency of the evacuation must be directed by the circumstances of the case; but it ought to be used freely till the inflammation begins to subside. The most troublesome cases of ophthalmy are those which occur in very old and infirm persons; where the weakness of the habit forbids such evacuation of blood, as the inflammatory affection of the eyes requires. Purgatives, and other cooling remedies should be added. Warm soft water, used by frequent washing, or directed in a gentle stream across the eye, abates the pain in the acute stage of the inflammation. When that has subsided,

subsided, the face, the neck, and head, if not covered with hair, should be frequently washed with cold water.

Sometimes, when the eye is not inflamed, the patient feels pain in the forehead, just above the eye-brow, which is now and then accompanied with sickness or retching. This complaint is the most effectually relieved by an opiate.

I have seen a few instances where the eye, upon being examined some days after the operation, has appeared to be affected with an amaurosis. The pupil has been found largely dilated, and the patient has had a weak perception of light. I know not how to account satisfactorily for this accident, which, as far as I have seen, is more alarming than dangerous, if the retina was in a sound state previously to the operation. In most of the cases of this kind which have fallen under my notice, bleeding has appeared to relieve the complaint; the iris has by degrees regained its contractile power, and the retina has been restored to its natural sensibility. One Patient, whose Case I shall relate, was attacked with a temporary amaurosis, after she had regained her sight, and had left the Infirmary *.

It

* Case 6. p. 93.

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It would scarcely be necessary to mention the rising again of the cataract, when enumerating the consequences of the operation, but that some good authors have considered this as a circumstance, which affords an important objection to the operation of couching, and renders it fruitless. This circumstance may require a repetition of the operation, but throws no hindrance in the way of the cure. If the cataract, though risen again into view, appears detached, so as to move sensibly and readily in the vitreous humour, with every motion of the head; it will sometimes, by degrees, subside and finally disappear without any further assistance.

Since the first edition of this Work was published, a cataract, which had been depressed in the eye of an old man, rose again, and came into the anterior chamber, after he had been dismissed cured from the General Infirmary; an event which never before occurred in my practice. Several months elapsed after this accident before I saw the Patient again. I then found the eye injured by inflammation, and in a state unfit for any further operation. Afterwards (in 1806) I couched the other eye, then rendered useless by a cataract, which had existed in its incipient state before the

former

former operation. He regained the perfect use of this eye, without any return of the former accident. CHAP. IV.

In two cases I was led to suspect, that the removal of the cataract had detached a small portion of the membrana nigra from the ciliary processes. In both these instances, the patient could see distinctly immediately after the operation; but in the course of a week the sight became obscure, though there was no subsequent inflammation, no opacity in the cornea, nor morbid dilatation of the pupil. The cataracts were firm, and were easily depressed; nor did they appear to have risen again. One of these Patients complained that objects appeared blue to her; but her sight remained sufficiently good to enable her to do the ordinary business of her house. The other Patient came from Cumberland, and I have had no opportunity of knowing what degree of sight he continued to enjoy.

A frequent and most important consequence of the operation, and one that succeeds the method of extraction, as well as that of depression, is an opacity of the capsule of the crystalline. This *secondary* cataract will appear when no inflammation has succeeded the operation. It will sometimes disappear by the

CHAP. IV.

the effect of time, as in cases of cataract from blows or punctures; but this event is often slow, and always uncertain. If time does not remove this disease, recourse must be had to the needle. When an aperture has been made in the centre of the capsule, at the time of the depression, and remains so large as to enable the patient to see distinctly; the opacity of the surrounding part of the capsule need not be regarded. But if any opake portions occupy the axis of the pupil, and do not soon shew some return of transparency; it is proper to repeat the operation, for the purpose of breaking asunder, or removing, the opake portions.

When portions of the opake capsule hang floating in the posterior chamber of the eye, it is difficult to pierce or lay hold of them. The attempt to remove them must be made in different directions; yet with great caution, lest the iris should be injured. I have sometimes succeeded in detaching these portions by moving my needle upwards, when the motion downwards has failed to lay hold of them.

When the capsule appears in cross threads like net-work, the instrument will readily break them asunder. Sometimes the capsule has a considerable degree of elasticity, and springs

springs up again immediately with force after being depressed. When fragments of this kind are near the circumference of the crystalline, and do not materially interrupt the passage of the rays of light; it is the most prudent method to leave them, lest the ciliary processes should be injured by tearing them off. CHAP. IV.

As the opacity of the capsule, which forms the secondary cataract, is usually diminished in some degree by time; I consult the inclination of my patients with respect to the time and frequency of these secondary operations. A labouring man, who has a family to maintain by his work, will not perhaps regard a frequent repetition of the operation, that he may the sooner return to his labour. Persons of a higher rank often prefer a delay. The Lady, whose description of the pain arising from the operation I have already mentioned, had a secondary cataract in each eye. She chose to have the operation repeated upon one eye, and to wait the effect of time upon the other. Both methods succeeded; but there was no return of transparency in the capsule of that eye for which the needle was not employed, till about six months after the depression of the cataract. I never knew but

one

CHAP. IV.

one instance in which the broken fragments of the capsule coalesced, and became reunited. This Case I shall relate *.

I have often seen in persons who have been couched, and sometimes in those who have never had a cataract, a tremulous motion of some transparent substance in the anterior chamber of the eye. May not this be owing to some portion of the vitreous humour which has passed through the pupil? I never saw any degree of opacity in this substance, nor does it seem to create any impediment to perfect vision.

The vitreous humour does not appear to suffer the least injury by the passage of the needle or cataract through it. If there was any tendency in this humour to become opake, we should frequently see this consequence ensue from the operation of couching. But no such consequence, I believe, was ever known to ensue. On the contrary, this humour seems to be in as proper a state for the transmission of light after the operation, as it was before.

Surgeons, who undertake the operation of couching, should not be induced by their desire of completing the cure at one operation, to

* Case 5. p. 90.

to use long continued efforts to depress or break down a cataract. By such efforts there is great danger of injuring the eye. It has been too much considered as a matter of disgrace to the operator, if sight has not been immediately restored to the patient. The fear of this disgrace has probably consigned many an unhappy sufferer to irremediable blindness. A cautious procedure, though more slow in its progress, will more surely arrive at the desired end. Neither the pain, nor the danger attending the operation, is great, if it be conducted with caution: and when a patient has been informed of the operator's design, and finds less inconvenience from the operation than his fears had led him to expect, he will seldom object to that treatment which affords him the greatest hope of regaining the blessing of sight. When custom has reconciled our patients to hear without surprize, that a repetition of the operation is often necessary to effect a cure; they will no more think this circumstance a disparagement to the art, than when they hear that repeated bleeding is often necessary to cure an inflammation. One principal thing to be kept in view by the operator is, to do no harm. If he secures this, he will almost certainly do

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some good, and often much more good than he expects. An operation may be performed without the least apparent advantage at the time, and yet in the end may prove the means of cure. The operation of couching has been, till of late, chiefly confined to itinerant oculists, whose mode of life requires dispatch. They are therefore obliged, let the state of the cataract be what it may, to continue their efforts till it is either removed, or so far broken down, that some rays of light may be immediately admitted. Various objects are then presented to the patient; and if he can discern them, he is pronounced cured; and prompt payment is required, without regard to the future consequences which this method of treatment may produce. I am convinced that many persons, whose cases were not incurable, have been rendered totally and irrecoverably blind by this mode of procedure, when there was no want of dexterity in the operator.

I have subjoined a few Cases, by way of illustrating some of the observations made in the preceding pages.

CASE 1.

Cataract with Lippitudo.

June 22d, 1775, I couched both the eyes of an old man, whose case was attended with the following unfavourable circumstances. His eye-lids had been sore and turgid for some years. His eyes were watery, and appeared to be in an irritable state. The left cataract was firm, and was removed intire; but the right was rather soft, and suffered the needle to pass through it. The next day his eye-lids were a little more swelled; and he complained of a slight pain over the right eye-brow. His left eye was not at all inflamed; and the conjunctiva of the right had very little more redness than before the operation.

July 1st. His right eye was quite easy, and he could see a little with it. The cataract in the left eye appeared again; but in a few weeks it became sensibly wasted. His sight was gradually restored, so that at the end of September following he could see very well.

In the year 1799, I couched both eyes of the Rev. Mr. PATTENSON, of Ripponden, which were in the same morbid state as that above described, and had been so for many years.

CHAP. IV.

Case 1.

The operation was twice performed on each eye, with the interval of a few weeks; but at neither time did it cause much alteration in the thickening of the eye-lids, or turgid state of the vessels of the conjunctiva. Some time after his return home, he wrote to me to inform me of his comfortable situation, which he thus describes: "I thank God, I can do "my duty in the church, and in the school, "with almost as much ease and comfort as at "any former period of my life."

Mr. PATTENSON's eyes were in so tender a state before the operation, that he had been in the habit of wearing a green shade upon his head. In reference to this he makes the following observation in his letter: "I have "no pain in my eyes, and feel no incon-"venience from walking without any shade "over them, except in a strong sun."

CASE 2.

Soft Cataract.

Case 2.

In 1776, Wm BIRKENSHAW, of Billingley, who had lost one eye, came under my care at the General Infirmary, on account of a cataract in the other. I found it uniformly soft and yielding; permitting the needle to pass through

CHAP. IV.

Case 2.

through it in any direction, without changing its position or appearance. At the request of my Patient, I repeated the operation after a short interval; but with no greater success than before. Not discouraged myself by this apparent failure, I explained to the poor man the reason of the hope which I entertained of succeeding finally by a repetition of the operation. He gained confidence by my representation; and as he had a large family to maintain by his labour, and was, therefore, anxious to regain his sight as soon as possible, I yielded to his solicitations, by repeating the operation with shorter intervals than usual. The cataract put on by degrees a broken appearance; and being partly dissolved, or restored to transparency, and partly removed by the needle, a perfect cure was at length obtained. I couched him seven times, yet he never seemed to have the least fear of the operation. He had rarely any redness in the conjunctiva in consequence of the operations, except about the puncture; and seemed to suffer very little from them. I saw him about two years after his cure; when he informed me with great pleasure, that he was then able to maintain by his labour a family, consisting of his wife and seven children.

CHAP. IV.

CASE 3.

Partial Adhesion of the Iris to the Catara

Case 3. JOHN HEALDE, aged 23 years, was mitted into the General Infirmary in J 1774, on account of a cataract in his left e I was apprehensive, from the appearance the part, that the disease was seated in capsule of the crystalline, rather than in humour itself; for a small portion in middle of the cataract was transparent, wl the upper and lower parts were opake. T upper opake part appeared thin; but the lo appeared thick and shrivelled, and was o pale yellow colour.

The right eye was enlarged, and distort having an opake crystalline, and an immo able iris.

The Patient gave me the following accou of his case. He was struck upon the left e by a cinder thrown at him when he was sev years old. A violent inflammation succeed the injury, and ended in a total loss of sig in this eye; which continued till he was nin teen. About that time the right eye becan dim, and enlarged; yet in the left he regain a small degree of sight, which remained th

Case 3.

that he could conduct himself in walking, though he could not execute his ordinary business. There was a tremulous motion observable in the anterior chamber of the left eye, though the fluid which it contained was transparent. The iris was a little concave on its anterior surface.

I performed the operation June 7th, and found the two opake portions connected with the crystalline, and the superior one adhering to the iris. I could not readily break this adhesion; and therefore left the parts in their former state, after making such attempts to detach the cataract, as I judged consistent with the safety of the eye. He seemed to suffer more pain than usual from the operation; and became sick with it. The pain ceased in about an hour and a half, and never returned; except that he had now and then a slight pricking sensation in the eye.

June 24th, I couched him a second time, but could not separate the upper part of the cataract from the iris. No inflammation succeeded the operation.

July 4th, He was couched the third time. The cataract still adhered to the iris, but not so firmly as before. No inflammation supervened.

CHAP. IV.

Case 3.

12th, I operated the fourth time, but without success. The needle always pushed the cataract in part through the pupil, when I attempted to detach it; but it returned immediately to its former situation. No inflammation.

20th, I couched my Patient the fifth time, and then succeeded in destroying the adhesion, and removing the cataract. I could not perceive any part of it the next day; but it afterwards rose up gradually, and regained its place.

August 6th, I performed the sixth operation. The cataract was again removed, and appeared no more. No inflammation supervened. The man was shortly after discharged cured.

By this gentle procedure, I was enabled to destroy a very strict adhesion of the crystalline and its capsule to the iris, without injury to this delicate membrane. I am strongly inclined to believe, that had I, through fear of being foiled in an operation, broken down the adhesion at once, I should have sent my Patient home in total darkness: whereas I had the pleasure of seeing him restored to as perfect a degree of sight, as is usually enjoyed with the loss of the crystalline humour.

It seems as if the crystalline, though not opake itself, had adhered to the opake capsule. It is also worthy of observation, that the capsule had spontaneously regained some transparency, in its central part, after having remained in an opake state during twelve years. CHAP. IV. Case 3.

CASE 4.

Total Adhesion of the Iris to the Cataract.

In October 1800, Mr. JAMES HOLGATE, of Hawkesworth, woolstapler, aged 21 years, was brought to me by his father, on account of a loss of sight; and gave me the following history of his case. Case 4.

About a year and a half before this consultation, his eyes became inflamed, and his sight began to diminish. The diminution of sight increased gradually during the course of a year, till he became so blind, that he could merely perceive a glimmering of light, or a bright red colour; but could distinguish no object. In that state he had continued for half a year without any amendment.

The capsule of the crystalline humour was uniformly opake, and of a white colour. It adhered universally to the iris, so that there

CHAP. IV. Case 4.

was not the least perceptible alteration in the size of the pupil, upon varying the degree of light to which the eye was exposed. Both eyes were in this state. They were rather prominent, but were not now in an inflamed state.

I informed the young man and his father, that I could not entertain much hope of a cure in such a case as this; but that, if the young man was desirous of submitting to an operation, under such a state of uncertainty; I would do every thing for him which was in my power. I informed them also, that as the operation could not well diminish his sight; so neither was it likely to injure the appearance of his eyes. There was a possibility of its proving in some degree beneficial. The young man was very desirous, that I should make an attempt to restore to him some degree of sight, if there was but a possibility of doing him good by the operation.

After keeping my Patient a few days on slender diet, and giving him a gentle laxative, I operated on both eyes; but found the adhesion of the capsule to the iris so firm, that I could not make an evident separation in any part, without using more force, and continuing my efforts longer, than I judged to be prudent.

Notwith-

CHAP. IV.

Case 4.

Notwithstanding this failure, my Patient was not discouraged. He had felt less pain from the operation than he had expected; and having no inflammation in his eyes after it, excepting a slight degree of tenderness, he was desirous that I should renew my attempts, as soon as I should judge another operation to be proper.

Upon repeating the operation, his perception of light was a little increased, though I could not discern any decided separation between the capsule and iris.

Encouraged by a gradual amendment, and the trifling degree of tenderness in the eyes, which succeeded each operation; I pursued my plan with steadiness, at the earnest solicitation of my Patient, and repeated the operation about once a month.

After the fifth operation, he could discern the pointers upon the face of his watch, when he placed it in certain positions, suited to the breaches which were now made in the capsule.

These breaches were gradually enlarged; but some operations were more successful than others. The eighth increased much the field of his vision; but the eleventh made a greater alteration than any which had preceded. By this

CHAP. IV.

this operation the greatest part of the capsule in the right eye was removed, and that of the left eye was considerably detached.

Case 4.

He had before this time walked without a guide in a private yard adjoining to the house where he lodged; but his sight was now so much improved, that he was able to walk alone through the crowded streets of Leeds.

After the twelfth operation, I advised him to return home, and to wait for some months the event of these attempts to restore his sight. He complied with this advice, though with some degree of reluctance, having received so much benefit from the operations; and being desirous of obtaining as soon as possible that accurate sight which his business required. Whether this will ever be obtained is a matter of some doubt: but the advantage and comfort which he now enjoys are not inconsiderable*.

CASE 5.

Fragments of the Capsule coalescing.

Case 5. In May 1769, RUTH POWELL was received into the Infirmary, for a cataract of the right eye—

* The operation was afterwards repeated at his request; but he derived no further advantage from it.

eye. The left had been couched eight months before by an itinerant oculist, who punctured the cornea (as I was informed) to let out the aqueous humour, rendered turbid by the operation. The subsequent inflammation had caused an obliteration of the pupil.

I depressed the cataract very readily with a round needle, and it did not reascend; yet my Patient received very little benefit from the operation. Upon examining the eye a few days afterwards, the capsule was found to have become opake; though it was transparent at the time of the operation. I had punctured it with my needle; but the puncture having been made below the centre of the pupil, the rays of light could not fall upon the retina, except when the pupil was largely dilated. When the pupil was much contracted in a strong light, she could discern no object; for the iris then covered the broken part of the capsule.

The inflammation which succeeded this operation was so trifling, that she walked about the ward, with her eye uncovered, before the expiration of a week *.

I per-

* I mention this as a fact; but I do not recommend, nor usually permit it.

CHAP. IV.

Case 5.

I performed a second operation, a fortnight after the former, with a view of tearing in pieces the remains of the capsule, or, at least, of enlarging the aperture which I had before made in it. The resistance given to the needle by that delicate membrane, floating in the aqueous humour, was so small, that I found it difficult to tear off any part of it, and impossible to remove the whole. The attempt, however, was not unsuccessful; for her sight was so much improved by it, that she was enabled to follow her usual employment without difficulty.

She continued to enjoy distinct vision for two or three years; and then began to complain of some dulness in her sight. I examined her eye, and observed, that the remaining fragments of the capsule, which had hung loose, and left an aperture almost as large as the pupil in a moderate light, now formed two small transverse threads, which rendered vision somewhat indistinct. I advised a repetition of the operation, and at first she seemed desirous of it; but finding that she could still execute her business tolerably, she deferred procuring a re-admission into the Infirmary, and finally remained satisfied with the advantage she had received.

It is difficult to conceive how such a coalescence of the small and floating fragments of the capsule, as I have described, could happen. Case 5.

CASE 6.

Temporary Amaurosis from Inflammation.

May 28th, 1772, I couched both the eyes of SARAH NEWSOME. The subsequent inflammation was trifling, and disappeared the third day. June 12th, I repeated the operation on the left eye; and performed a third operation the 25th of the same month. The two latter operations were followed by no greater inflammation than the first. Case 6.

The cataract in the right eye, which had been broken at the first operation, disappeared so fast, that no repetition was required.

When she could distinguish objects in the fields before the Infirmary with the right eye, she was dismissed; with directions to return in about a month, that her eyes might be examined.

Upon her return, I was surprised to find, that she had lost that degree of sight in the right eye, which she enjoyed when she left the

CHAP. IV. Case 6.

the Infirmary. Yet the cataract had not appeared again; nor was there any opacity to be perceived in the cornea, or capsule of the crystalline. The pupil was too much dilated; and the iris did not contract upon exposing the eye to a pretty strong light. In short, the eye appeared to be affected with an *amaurosis*.

Upon inquiring into the cause and progress of this unexpected complaint, the Patient informed me, that in returning home, when dismissed from the Infirmary, she had caught cold; which brought on an inflammation in the right eye, and a gradual loss of sight. The redness of the conjunctiva had nearly disappeared; but she still felt a tenderness of the eye.

From a consideration of these circumstances, I was led to suspect, that the complaint was of an inflammatory nature; and accordingly I ordered her to be bled immediately, and directed a purgative to be taken the following morning. These means afforded the wished-for relief, and the eye was restored to its former state.

I saw this Patient February 17th, 1792, twenty-seven years after the operation; and she

she then enjoyed her sight as completely as the loss of the crystalline humour will admit *.

CASE 7.

Cataract rising again, and spontaneously subsiding.

In 1770, ANN JENKINS was admitted a patient of the General Infirmary, for a cataract in one eye, the crystalline of the other being also slightly opake. I depressed the cataract without any considerable difficulty. On examining the eye two days after the operation, I perceived the cataract to be in its former situation.

When the tenderness of the eye was removed, the operation was repeated; and at my first examination the eye had a good appearance. The Patient also found her sight restored. But as the tenderness of the eye decreased, the cataract rose again; till it came nearly into its original situation. She was now made an out-patient; and about a fortnight after

* Convex spectacles are generally necessary for those who have lost the crystalline humour. I have had some patients, who, when first restored to sight, have been under the necessity of joining two pairs of spectacles for a time, and afterwards have been able to see well with one pair.

she became sen-
in her sight; and
that I would examine
that the cataract had
outside. In a short time
restored, and she regained

CASE 8.

Secondary Cataract.

1780, I couched both the eyes
eight years old, the daughter of
MYERS, of Stainburn. The ca-
sort: and permitted the needle to
through them in all directions, without
them from their place in the vitreous
They appeared a little broken; but
was made clear by the operations.
eyes remained tender; but no inflamma-
supervened. I sent her home, to wait
months before I should repeat the ope-
ration.

In June 1781, she came again under my
e. She now could see very well with the
t eye. The capsule of the crystalline,
ich I had ruptured at its centre with the
edle, was retracted on all sides towards
its

Case 8.

its attachment at the circumference of the crystalline. There was an aperture left as large as the pupil in a strong light; but in a moderate light, the remainder of the capsule appeared all round, just within the edge of the iris.

In the left eye, the broken fragments of the capsule adhered to each other; so as to prevent the direct rays of light from falling upon the retina. She could, therefore, see no object distinctly with the left eye.

I did not think it necessary to run any risk, by attempting to enlarge the field of vision in the right eye; but I removed the opake capsule in the left eye, which readily yielded to the pressure of the needle. Having laid hold of the capsule near its centre, where it formed some transverse opake threads, I found it to be more firm there than at its circumference; for the whole of the capsule was removed at one effort.

The crystalline humour seemed to have been dissolved since the former operation; for I could discern nothing opake, except the capsule.

The operation was attended with very little pain, and no inflammation succeeded. The

CHAP. IV.

Patient saw well, and could bear a strong light within a fortnight after the operation.

Case 8. I saw this Patient in 1782. A small portion of the capsule, which I had removed, appeared towards the external canthus of the eye; but it projected so little, that it seemed to afford no hindrance to distinct vision.

Since the restoration of sight in the left eye, she had begun to squint a little with the right, in which there remained a circle of opake capsule, as above mentioned.

CASE 9.

Cure obtained by making the Needle pass through the Cataract.

Case 9. A Child of two years old was admitted into the General Infirmary, on account of a congenital cataract in each eye. She could discern a glaring light, as a lighted candle, or burning coal; and could also, in a strong light, discern some of the most vivid colours. Her eyes were usually directed to the same object; but she often placed them for a short time in different directions, as if she was looking at two distinct objects. She rolled them about much; which made her sometimes

appear

appear like an ideot, though she was a very sensible child. She was often moving her hand with rapidity before her face, when placed opposite a window; and delighted to blow out a candle, and do other similar tricks, that made a variation in the sight which she possessed.

I attempted to couch her left eye, but was repeatedly prevented by the difficulty of holding her steady; and by the power which she had of retracting her eye within the orbit, and thereby rendering the conjunctiva flaccid. She could do this in so great a degree, as sometimes to hide the whole of the cornea by the wrinkled conjunctiva, which then lay in folds before it. I once succeeded so far as to penetrate the eye with my needle, and just move it through the cataract; but her wriggling motion made any continued attempt to depress the cataract so hazardous, that I was glad to withdraw my instrument without doing any injury to the eye.

The child was dismissed, till a more advanced age should render the operation less hazardous.

About three years afterwards, being in the neighbourhood of the child's parents, I looked in upon them, for the purpose of seeing the

CHAP. IV.

child; and was agreeably surprised to find the left eye, into which I had introduced my needle, almost clear. The restoration of the child's sight (for it was now in part restored) had been so gradual, that her parents could not inform me of the time when she began to discern objects.

Case 9.

The rolling motion of the eyes still continued.

CASE 10.

Pain above the Eye-brows.

Case 10.

In 1799 I couched the right eye of Mrs. SPOTSWOOD, of Lincoln, an elderly lady. The night after the operation, she complained of much pain in the forehead, just above the eye-brow; attended with sickness at the stomach; but there was no appearance of inflammatory affection in the eye. I gave her a gentle laxative; and after that an opiate, which removed the painful sensation, and the sickness. Her case required a repetition of the operation. I couched her eye four times, before the opake portions of the capsule were sufficiently removed. The pain, which had affected her after the first operation, never returned; nor did the least inflammation supervene.

supervene. After the three last operations, she informed me that the pain caused by the puncture ceased so soon, that she felt no uneasiness after I had left the room in which I had operated. Indeed the uneasiness ceased almost as soon as I had withdrawn my needle, and did not return. CHAP. IV. Case 10.

The year following, this Lady favoured me with a letter, very well written by her own hand.

Opiates have always, as far as I can recollect, relieved the complaints above-mentioned; even when they have been accompanied with some inflammatory affection of the eye.

The Lady's case was by no means a favourable one, as there was too great a contraction in the pupil previous to the operation: so that I considered the success as more doubtful than usual. The left eye was in so morbid a state, that I did not operate upon it.

CASE 11.

Contracted Pupil.

In September 1793, Mr. CHAMPLEY, of Thornton, near Pickering, aged 72 years, consulted me on account of a loss of sight in both eyes. Case 11.

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Case 11.

The left eye appeared to be affected with an amaurosis; the right eye with a cataract. He could not distinguish one person from another; nor was he able to walk abroad without some person to conduct him.

The right eye was by no means in a favourable state for the operation; as the pupil was much contracted, and the iris almost immoveable. A very slight motion of the iris might be perceived upon exposing the eye suddenly to a strong light. In the twilight he had a small perception of light with this eye; but in a strong light the pupil was so much contracted that he could see nothing.

I explained to my Patient, and to his Nephew, a sensible young man who accompanied him, the nature of the diseases with which his eyes were affected; and proposed the removal of the cataract in the right eye, though my hopes of success were not sanguine. However, as a failure in my attempt to restore the sight would not make his condition to be worse, my Patient consented to the operation.

The great difficulty in this case was, to know when the point of my needle was brought into a proper place for depressing the cataract, as I could not see the instrument through the pupil. The shortness of my needle

needle greatly assisted me in this dilemma. When I had introduced it as far as I judged proper, I brought forwards its point towards the pupil; and observing that in this motion the cataract was made to advance, and dilate the pupil, I was certain that the instrument was then pressing upon the posterior part of the crystalline, in which its point might now probably be entangled: I therefore turned the point backwards, and had the pleasure to see the cataract carried away by it. The cataract disappearing as I depressed the point of my needle, I turned the point backwards towards the outer canthus of the eye; and then withdrew the needle in a direction parallel to the axis of the pupil.

CHAP. IV. Case 11.

Mr. CHAMPLEY had very little uneasiness after the operation; but was anxious to return home, as he apprehended he had received no benefit from the operation. I could not prevail upon him to stay longer than a week at Leeds. Before his return, I procured some cataract spectacles; and requested him to make a trial of their use. He was surprised to find, that by the assistance of a pair moderately convex, he could distinguish the faces of the persons in his room, and describe their dress. He could also distinguish capital

CHAP. IV.

Case 11.

letters in the title page of a small dictionary, which lay upon the table. He discerned the small figures in a paper with which the room was hung, but mistook a little the colour of the ground of the paper. In several trials which I made, I found that he could distinguish figures better than colours.

I have not yet made a sufficient trial of Professor SCARPA's method of depressing the cataract, to enable me to judge of its superiority to that method which I have been in the habit of using: nor can I, from my own knowledge, appreciate the comparative merits of *extraction* and *depression*. But I sincerely wish, that that mode of operating may prevail, which is most beneficial to the afflicted.

CHAP. V.

On the STRANGULATED HERNIA.

THE *Strangulated Hernia* is a frequent disease, and one which requires great and speedy attention. Persons afflicted with ruptures are numerous. The prolapsed parts are often in a painful and irreducible state for a few hours, and then retire without any bad consequences. On this account, patients often permit them to remain in this state much too long, without calling in proper assistance.

When a medical person is consulted, the disease is sometimes concealed, either from modesty, or from the pain being less in the rupture than in other parts of the abdomen, which is sometimes the case; the patient having no apprehension that pain at the navel or stomach, with frequent vomiting, can be caused by a small swelling in the groin. This concealment happens the most frequently in the female sex, and is sometimes carried to an extreme; so that I have more than once known the patient deny the existence of the disease. On this account I have made it a rule

CHAP. V.

rule for many years, always to examine those parts of the abdomen which are the usual seat of a hernia, whenever I am called to a patient labouring under the *Ileus*. For want of this precaution, the strangulated hernia may prove fatal, by being mistaken for a simple ileus. Such mistakes I have known to happen. Indeed, in the femoral hernia the tumour is sometimes so small, and free from external inflammation, or tension of the integuments, that there is danger lest the surgeon, without a careful inquiry into all circumstances, should mistake the rupture for an enlarged inguinal gland *.

When the nature of the complaint is clearly ascertained, the danger is often increased by continuing too long the use of those means, which are designed to procure a reduction of the strangulated intestine. The complaint is sometimes, indeed, so rapid in its progress, that the patient is scarcely alarmed with his danger before the disease is irremediable. But, in all cases, it is of great consequence to make choice of such means, for producing a reduction,

* Mr. ELSE found a portion of intestine strangulated in the groin, behind an enlarged gland, in a patient who died the third day of the strangulation.

Med. Obs. & Inq. vol. iv. p. 355.

reduction, as will take effect in a short time; or will soon determine that reduction is impracticable. A strangulated hernia often retires spontaneously, or with the slightest assistance; and sometimes after the disease has continued many days: but if we suffer our expectation to be raised much by such favourable events, we shall often bring on that fatal termination which might otherwise have been prevented.

No mode of treatment has hitherto been discovered, which will *certainly* procure a reduction of the strangulated hernia, without having recourse to the knife. Writers on this disease seem to have considered the treatment which they have recommended, as appropriated to all subjects labouring under the complaint; yet some difference, I think, ought to be made in our manner of treating a patient who is seized with this disease in the full vigour of life, and one debilitated by previous illness, or of a very feeble constitution.

The principal means advised previously to the operation are, bleeding, purgative medicines, purging clysters, opiates, the warm-bath, the cold-bath, the application of cloths dipped in cold water, solutions of crude sal ammoniac, ice, ether evaporated on the part,

and

CHAP. V.

and the injection of tobacco in fume or decoction; to which must be added the attempts to replace the strangulated part in a posture favourable to reduction. Authors have given us instances of the success of all these means. I have seen most of them succeed. I have seen them all fail. I have seen the strangulated parts retire without the use of any means, and even after the strangulation had continued many days. The recital, therefore, of single cases, in which success was obtained by this or that method (though not useless), does not much advance our knowledge. We want to know the comparative merit of each method; and this it is difficult to obtain. I will give the result of my experience on each of these methods.

Bleeding. The strangulated hernia has been usually considered, till of late, as an inflammatory disease, and the use of the lancet has been almost universally adopted. Mr. POTT, who wrote much from his own experience, says, "Perhaps there is no disease "affecting the human body in which bleed-"ing is found more eminently and immedi-"ately serviceable than in this, and which, "therefore, if there are no particular circum-"cumstances in the constitution prohibiting "it,

"it, ought never to be omitted." Pott's Works, vol. ii. p. 68, octavo edition.

Mr. BENJAMIN BELL gives the same advice. "Blood letting is here a principal "remedy. In no disease is it either more in- "dicated from appearances, or affords more "relief in reality." Surgery, vol. i. p. 275.

On the contrary, Mr. WILMER, of Coventry, who has published some valuable observations on strangulated hernia, is of opinion, that "in these cases, the death of the patient can "only be explained by the inverted peristaltic "motion immediately lessening the powers of "life;" and thinks "that large and repeated "bleedings must increase the debility, and "do much mischief." *Obs. on Hernia*, p. 39. He thinks that bleeding "is extremely unfa- "vourable to the patient's recovery," should the operation for reducing the hernia be afterwards performed; and after declaring, that "most of the patients who are brought "into public hospitals die after this opera- "tion," he seems to attribute this want of success to their having been bled copiously. Ib. p. 45.

Mr. ALANSON, of Liverpool, coincides with Mr. WILMER in his opinion of the inutility of bleeding in this disease. He tells us, that

bleeding

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bleeding ad deliquium had been the constant practice at Liverpool, and adds, " As soon as " the deliquium happened, the taxis was tried " during that stage; but I never saw this " method successful, nor do I think bleeding " ever of the smallest service in forwarding " reduction." Ib. p. 44.

Amidst this contrariety of opinions, what path must the young practitioner pursue? I entertain a favourable idea of all these authors; yet it is impossible that I should think them all to be right in these discordant sentiments. If I may be allowed to judge from my own experience, I must conclude, that this matter has been carried to an extreme on both sides. I have seen some cases in which bleeding has been clearly useful. I have seen others in which I judged it to be highly improper. I will relate an instance or two on both sides the question, from which the reader may better comprehend my meaning.

CASE 1.

Case 1. Nov. 24th, 1766. I visited, in the evening, WILLIAM PRATT, of Bramley, a stout young man, whom I found labouring under a strangulated hernia. The strangulation had sub-

Case 1.

isted about seven hours; during which time he had drunk about half a pint of gin, diluted with water, apprehending his complaint to be the colic. He vomited frequently, and had a full, strong, and frequent pulse. He could scarcely suffer me to handle the tumour, though there was no external appearance of inflammation. There was no tension of the abdomen. I opened a vein in each arm; and took away, in a speedy manner, betwixt twenty and twenty-four ounces of blood, while he sat upright in bed. He felt himself immediately relieved; and when I examined the groin, after tying up his arms, the hernia had retired.

CASE 2.

Case 2.

Nov. 13th, 1775. WILLIAM RENTON, porter to the General Infirmary at Leeds, arose about two in the morning, to assist the chimney-sweepers; but became so ill with pain at his stomach, and sickness, that he was obliged to go to bed again at five. He continued all day to complain of much uneasiness at his stomach; and vomited up every thing that he took. I happened to be at the Infirmary in the evening, and visited him. The late Dr. CROWTHER had prescribed for him a solution

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Case 2.

solution of Epsom salt, but it was constantly rejected. Knowing that he was subject to a hernia, I inquired if it was now prolapsed. He seemed at first not to have thought about it; but upon my examination, he acknowledged that it had been down all the day, though he had no pain in the tumour. I ordered him to sit up in bed, while about a pint of blood was drawn by opening a vein in each arm at the same time. He became sick before the evacuation was finished, but had no deliquium. Immediately after the bleeding, I placed him in a horizontal position, and tried to reduce the intestine, which now went up very readily; though I had before the bleeding attempted the reduction in vain.

I relate these Cases, to shew that there are circumstances in which bleeding may be of use; but I do not mean to impress upon the reader an idea, that a like happy termination will generally attend this evacuation. I know it will not. My own experience leads me to concur so far with Mr. WILMER and Mr. ALANSON, as to declare, that bleeding has generally failed to procure a reduction of the strangulated intestine; though I am persuaded, that in many cases it may be used with advantage.

advantage. I cannot, however, agree with Mr. WILMER in thinking, that it generally renders the subsequent operation more dangerous. The following observations induce me to differ from this opinion. CHAP. V.

When the operation proves unsuccessful, without gangrene of the prolapsed part, the patient almost always dies with symptoms of the ileus; and this disease (which is an inflammatory affection of the intestines) generally succeeds the operation in some degree, if the patient recovers with difficulty. And we cannot, I think, with propriety suppose, that this disease is ever brought on by previous bleeding.

Again, in all the cases which I have seen, where the operation has not succeeded, and where I have had an opportunity of examining the body after death, I have found signs of inflammation in the intestines, or omentum, or both. I have found inflammatory, and even gangrenous affections, at a considerable distance from the part which had been prolapsed. WARNER and LE DRAN have observed the same appearances. The former, in dissecting the body of a patient who died on the 20th day after the operation, found "the "intestines in general greatly inflamed, the

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"ileum mortified in many places, and several "abscesses formed in the mesentery." *Cases in Surgery*, ed. S. p. 197. The latter says, "I have often seen this whole canal inflamed, "and marked in several places with gangre-"nous spots." *Gataker's Translation of Le Dran's Operations*, p. 80.

Purgative Medicines. My experience leads me to condemn, almost universally, the use of purgatives taken by the mouth, while an intestine remains firmly strangulated. In the entero-epiplocele, when the intestine has retired, and the omentum remains strangulated; or in a simple strangulation of the omentum, where the intestine has not been prolapsed; purgatives are of great utility. So likewise in very large and old herniæ, where there is reason to doubt, whether the disease is not to be considered as a morbid affection of the intestinal canal, rather than the effect of strangulation, purgatives may be as useful as in the simple ileus without hernia. While the intestine remains firmly strangulated, they usually increase the vomiting, and add to the distress of the patient. If they are to be tried at any time with hope of success, the trial would appear to have the greatest advan-

tage when the vomiting has been removed by means of an opiate; yet I have repeatedly given them in vain during such an interval of relief. I once had an opportunity of trying their effect under the most favourable circumstances, while the strangulation remained unabated.

CASE 3.

Case 3. JOHN HANDLEY, aged 45 years, who had a small irreducible Epiplocele, by making some considerable exertions in lifting a table, caused a sudden increase of the tumour, which was followed by the usual symptoms of strangulation. His pulse was betwixt seventy and eighty. He was directed to take immediately a dose of ol. ricini, and afterwards to take magnes. alb. ʒss every two hours, drinking a table spoonful of lemon juice after each dose. Cloths dipped in cold water were applied to the tumour. These means afforded no relief. Neither of the medicines would rest upon his stomach. On the second day of the strangulation he was put twice into a warm bath; and had two clysters injected, made with a decoction of a drachm of tobacco boiled in a pint of water for ten minutes. Both the clysters caused great sickness, but did not

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produce a return of the hernia. At bed time he took fifty drops of tinct. opii.

Case 3.

The opiate procured a comfortable night, and the vomiting ceased for forty-eight hours, during which time he took nine table spoonfuls of castor oil, and half a drachm of the extract. coloc. comp.; all which medicines were retained upon his stomach. Purging clysters were also frequently injected, during this interval of two days; and the use of the warm bath was repeated.

At the end of the fourth day, from the commencement of the strangulation, the vomiting returned, and continued all the night. I was called to visit him at six in the morning, and found him vomiting frequently, having the hiccough, with tension of the abdomen, which had not subsisted before. His pulse was now small and frequent.

I immediately performed the operation, and found a portion of omentum in the hernial sac, inveloping a small portion of intestine, which was of a dark brown colour. The hernia was of the femoral kind. It was with great difficulty that I could introduce the tip of my fore-finger within the neck of the hernial sac, so as to enable me to divide the part, which caused the stricture, with safety. Part

of

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Case 3.

of the omentum adhered to the herniad sac, which was thickened where the adhesion took place. I cut off the diseased part of the sac, with the omentum adhering to it. Such part of the omentum as appeared to be quite sound was reduced; but the greater part of it was left in the wound. A small plug of lint was introduced into the orifice.

No medicine was given to him, as so much of the castor oil had staid with him. He had six copious stools, and three smaller ones, in the course of the first twenty-four hours. He found great relief from the operation. In the evening he was perfectly easy, and told me, that he had had a *rare day*. The small plug of lint came away, and the diseased part of the omentum was cast off, on the seventh day after the operation. He recovered very well.

Purgative Clysters. I cannot say that I have seen one case in which clysters, either made with purgative ingredients, or simply laxative, as of broth, or water gruel with oil, have produced a return of a strangulated hernia. Such injections will empty the larger intestines; but they have seemed to me to do no more. It is common for a natural evacua-

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tion to be the immediate consequence of strangulation.

Warm Bath. Many instances are upon record of the good effect of warm bathing in procuring the reduction of a strangulated hernia. I have often seen it useful; but I have also often seen it fail of success. Whenever it is used in this disease, the patient should be placed, if possible, in a horizontal position. Gentle efforts with the hand to reduce the prolapsed part are perhaps attended with less danger, and with greater prospect of success, while the patient lies in the bath, than in any other position. The free use of opiates coincides with that of warm bathing, and, under some circumstances, these means deserve to be tried in conjunction, as was done in the following Case.

CASE 4.

Case 4. February 2d, 1771, I was desired in the evening to visit a poor woman, who lived about a mile from Leeds, on account of a vomiting, which had afflicted her all the day, attended with violent pain in the abdomen. Upon examination I found that she had a strangulated femoral hernia. Her pulse was not

not very frequent. The abdomen was painful when compressed, but was not much inflated. She informed me, that she had been subject to the rupture for several years, which had been repeatedly strangulated for a short time. She was now violently affected with the cramp. Her fingers were almost continually rigid. She had pain in the abdomen, which seemed to arise from spasm, and not from the hernia; for it seized her by paroxysms, during which she cried out, and could not bear to lie upon her back. In short, almost all the external muscles, except those of the face, were affected with spasm. There was reason to believe that this disorder arose from inanition, as she had given suck to a child for two years, and probably had not always enjoyed a plentiful table. She had of late been often troubled with the cramp.

Under these circumstances I thought that opium and the warm bath would afford the most suitable means for promoting the return of the hernia. I ordered a warm bath to be prepared immediately; and directed four draughts, one containing tinct. thebaic. g" xx, and the other three g" xv. each: of these she was to take one every two hours. But previously to the use of these means a purging

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Case 4.

clyster was injected, as she had had no evacuation in the course of the day. She took the draught with t. theb. g^{tis} xx. as soon as she came out of the bath, but could not retain it upon her stomach; at least, she had retchings after taking it. The other draughts were not rejected; she became composed, the vomiting ceased, and in the course of the night the hernia retired.

Opiates. I have seen several cases in which opiates given freely (in athletic persons after bleeding) have procured a reduction of a strangulated hernia. I have also received accounts of success by the same means from some of my medical correspondents; but I cannot say that this remedy is generally successful. One circumstance relative to the use of this medicine deserves to be noted, viz. that it will often remove for a time the pain and vomiting, usually attendant upon a strangulation, even where it proves ultimately inefficacious. I have already related one instance in which the vomiting and pain were suspended during forty-eight hours, so that the patient lay easy, and retained upon his stomach every thing that he took, though the strangulation continued. I have seen other instances of persons remaining

easy,

easy, and free from vomiting, for twenty-four hours, after taking fifty drops of tinctura opii. On this account opium is a valuable remedy, when the patient is so situated, that it is necessary to remove him to a considerable distance before the operation can be performed. Opiates should be given in large doses, when it is intended to try their effect for procuring reduction; and whenever the symptoms of strangulation return, after having been removed by the use of opiates, the operation should be performed without further delay.

Cold stupes, and cold bath. Mr. WILMER has recommended the former of these means so strongly, that they are now frequently, if not generally, used as the principal remedy for procuring reduction. They had been mentioned by former authors *, and I had directed them, before Mr. WILMER published on the subject. I have used them very frequently, sometimes with evident advantage; but oftener, I am sorry to say, without success. I have no objection to this remedy, as I am not conscious that I ever saw it do harm: but relations of its success, after a long continued use, should be heard with some caution; as there is danger of deferring the operation, through the

* Medical Essays (of Edinburgh) vol. v. p. 232.

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clyster, made by boiling for a short time half a quarter of an ounce of tobacco in half a pint of water. The clyster had not been injected ten minutes before the boy began to complain of being very sick, and had some retching. I now attempted again to reduce the hernia, and succeeded with great ease.

Case 5.

CASE 6.

Case 6.

In the summer 1782, SAMUEL EDGE, aged forty years, was admitted an in-patient of the General Infirmary at Leeds, on account of an ascites and universal anasarca. He had been afflicted with an asthma many years, but the dropsy had not come on till the preceding winter. First one, and then the other, of his legs began to swell. Afterwards his abdomen became enlarged. In the absence of his physician I directed him to take three grains of powdered squill, mixed with a little pulv. e. tragac. c. three or four times a day, as his stomach would bear it. The medicine agreed with him, and the dose was increased till he took eight grains of the squill five or six times a day. He continued to take it in this dose about sixteen days, excepting two, on which the dose was diminished on account of its proving too laxative. The diuretic effect

was considerable, and both the ascites and anasarca were completely removed.

Case 6.

This poor man was subject to a hernia, which by his cough was rendered very troublesome. Before he was dismissed from the Infirmary, the hernia became strangulated; in which state it had been two days, before I was informed of the complaint. He complained of pain in the abdomen; and had a vomiting. The House Apothecary, not being informed, as I should suppose, of the hernia, had given him a gentle emetic, and afterwards a laxative medicine. As he had had some evacuation by stool on the day on which I first saw him, though the hernia could not be reduced by gentle pressure, I only directed an opiate, small doses of cathartic salt, and the application of cold water to the tumour.

The next day I found him worse. The cathartic salt had been rejected. He had taken three grains of opium, and had applied cloths dipped in cold water during the whole of the night, and part of two days. Though a large evacuation of blood was undoubtedly forbidden by the previous weakness of this Patient, yet I ventured to take about six ounces from his arm*; and then injected a clyster of the decoction

* In a similar case, I should now omit the bleeding.

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Case 6.

decoction of tobacco, made by boiling a drachm of the cut leaves for ten minutes in a pint of water*. Within fifteen minutes after this clyster was given, he informed me that he felt a *sudden degree of ease* in his belly. I immediately attempted to reduce the intestine, and it receded with ease.

A truss was immediately applied, and the man had no more complaint.

I have frequently injected the *fume* of tobacco in the strangulated hernia, but am inclined to prefer the *decoction*: both on account of its more powerful and speedy effect; and also, as being more conveniently administered. I wish I could say, that this has not often failed, like every other means which I have tried. I think, however, I may venture to say, that no method has succeeded so often; and that I have scarcely ever seen any other remedy succeed without the operation, when this had failed of procuring an evident diminution, at least, of the tumour. One thing must be allowed in favour of this remedy; that it discovers in a shorter time than any other,

* Wherever a clyster of the decoction of tobacco is mentioned in these observations, it must be understood to be made after this formula, unless otherwise specified.

other, whether there is a probability of obtaining a reduction of the hernia without the operation. I have usually thought one trial of this remedy to be sufficient; but have scarcely ever directed more than one repetition. When this has failed of success, the operation has discovered such a state of the strangulated parts, as to satisfy me, that no hope of advantage remained from a longer delay. CHAP. V.

It must not, however, be forgotten, that this remedy is attended with some danger, on account of its highly debilitating effect. Mr. COOPER relates a case in which it proved fatal to the patient. (On Inguinal and Congenital Hernia; part 1. p. 24.) The violent vomiting, which it often produces, cannot be considered as altogether harmless. The strangulated and inflamed intestine may, in some cases, receive more injury from this effect, than benefit from the relaxing powers of the remedy.

I have taken no notice of poultices, or partial warm fomentations. The efficacy of these means seems almost universally to be doubted, if not denied, by those who have had much experience in the treatment of this complaint.

The selection of the various remedies abovementioned must be left to the judgment of the prac-

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practitioner; who should be guided, in some measure, by the different circumstances of each case. But I can scarcely press in too strong terms the necessity of an early recourse to the operation, as the most effectual method of preserving life in this dangerous disease. If Mr. PORT's opinion be true, that the operation, when performed in a proper manner, and in due time, does not prove the cause of death oftener than perhaps once in fifty times; it would undoubtedly preserve the lives of many, to perform it almost as soon as the disease commenced, without increasing the danger by spending much time in the use of means, which cannot be depended upon for a cure.

I have twice seen this disease prove fatal in about twenty-four hours *. In such cases it is

* In one of these cases I made use of no means, as I did not see the patient till about half an hour before his death. In the other case, the patient, though a young man, died immediately after the operation. But this was a complicated case. On the preceding day the hernia had received a blow from a shovel, which produced the strangulation, and an inflamed state of the parts. His pulse was very frequent. Twelve ounces of blood were taken from his arm. A tobacco-clyster was injected; and cold stupes were applied to the tumour, which was in a very tense state. But he sunk rapidly. He was restless, and rather delirious during the operation,

is evident there is little time for delay. A surgeon, who is competent to perform the operation, is not perhaps consulted till the intestine is on the point of being mortified; or is actually in a state of mortification. The dilemma into which he is then cast is painful indeed. But when the fullest opportunity is afforded him of using the best mode of treatment, I am satisfied that his success will be the greatest when the operation is not long delayed. This, at least, has been my own experience. When I first entered upon the profession of surgery, in the year 1759, the operation for the strangulated hernia had not been performed by any of the surgeons in Leeds. My seniors in the profession were very kind in affording me their assistance, or calling me into consultation when such cases occurred: but we considered the operation as the last resource; and as improper until the danger appeared imminent. By this dilatory mode of practice I lost three patients in five upon whom the operation was performed. Having more experience of the urgency of the disease,

tion, which was performed as the only means which then afforded the least hope of preserving his life; but he expired, as soon as it was finished, in the act of vomiting.

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disease, I made it my custom, when called to a patient who had laboured two or three days under the disease, to wait only about two hours; that I might try the effect of bleeding (if this evacuation was not forbidden by some peculiar circumstances of the case) and the tobacco-clyster. In this mode of practice I lost about two patients in nine upon whom I operated. This comparison is drawn from cases nearly similar: leaving out of the account those cases in which a gangrene of the intestine had taken place.

I have now, at the time of writing this, (1809) performed the operation forty times*; and have often had occasion to lament that I had performed it too late, but never that I had performed it too soon†. There are some cases so urgent, that it is not advisable to

* Since the beginning of the year 1794, my Son, who is now my partner in business, has sometimes performed the operation in my private practice. These cases are not reckoned in the number here specified.

† If any exception to this declaration ever occurred in my practice, it was in the case related in the note, pp. 128. 9. The effect of the tobacco-clyster had not intirely subsided when I performed the operation: and I am now of opinion, that, however urgent the case may be, the operation ought not to be performed during the sickness and languor which usually follow the injection of a decoction of tobacco.

to lose any time in the trial of means to produce a reduction. The delay of a few hours may cut off all hope of success, when a speedy operation might have saved the life of the patient.

I am persuaded, that much harm has been done by long continued efforts to replace the strangulated intestine, especially when it is in a painful state. The patient, who has been accustomed to reduce his own hernia, will perform the operation of the taxis with the greatest safety. If he fails, the surgeon should be cautious of doing much. Suspension over the shoulders of an assistant or two has been thought to favour the reduction considerably. I have tried it often; but having found it inefficacious, I have now for many years laid it aside.

Sometimes the hernia retires spontaneously, or with the slightest efforts, if the patient is in a horizontal posture; but the expectation of such a favourable event, should not lead us to increase the danger by a delay of the operation.

When a surgeon attempts to reduce a strangulated hernia, he should bear in mind the anatomy of the parts through which it has descended; as the proper methods of reducing

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the inguinal and femoral hernia differ essentially from each other.

Before I proceed to point out this difference, and describe the operation necessary for removing the stricture which causes the strangulation, I shall premise a short description of the parts more immediately concerned in both species of hernia; referring the Anatomical Student for a more minute description of those parts to the elaborate and most valuable Work of Mr. ASTLEY COOPER; observing at the same time, that no description or drawings, however excellent, can supersede the necessity of a personal examination of the parts by dissection.

Inguinal Hernia.

The spermatic vessels in the male, and the round ligaments of the uterus in the female, pass out of the abdomen through a thin fascia which lies behind the transversalis muscle, and which was first discovered and described by Mr. ASTLEY COOPER. The aperture in this fascia, through which these vessels pass, is situated about the mid-way betwixt the superior spine of the ilium and symphysis of the pubis. The lower edges of the obliquus internus and transversalis muscles pass across

and close to the upper part of, this aperture; and the epigastric artery and vein run along its inner side*. From this superior and internal abdominal ring, the spermatic vessels, or round ligaments, pass obliquely downwards and forwards, in a canal called the *inguinal canal*, to the lower and external abdominal ring. This canal is formed by the aponeurosis of the external oblique muscle, which at the lower ring divides into two columns. The lower column, which is a continuation of Poupart's ligament, is fixed into the tubercle of the os pubis, while the upper one is attached to the front of that bone †.

When a hernia protrudes into, or through, the inguinal canal, in a male subject, it passes before the spermatic vessels: and when it has descended below the external abdominal ring, it is covered by the cremaster muscle, and by the superficial fascia which descends from the aponeurosis of the external oblique.

This course of the inguinal hernia, points out the direction in which our attempts should be made for its reduction. The best method of performing the *taxis* which I have tried, is that of gently compressing the neck of the hernial sac, that its bulk may be diminished

* See Plate 7. † See Plate 4.

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Inguinal Hernia.

where the stricture is the greatest; and then pressing the diminished part towards the abdomen. The patient should lie on the side opposite to that affected by the hernia; the abdominal muscles being relaxed by bending forwards; and the thigh brought to a right angle with the trunk.

The most convenient position in which the patient can be placed during the operation, is that of lying upon a bed of a suitable height, the shoulders and pelvis a little elevated, and the thigh of the affected side raised by placing the foot upon a low stool or chair.

The following Case will point out both the peculiar symptoms of the disease, and the manner of operating, when the hernia remains within the inguinal canal.

CASE 7.

Case 7. Monday, June 26th, 1809, I was called in the forenoon, to visit Mrs. WILKINSON, of Hunslet, whom I found labouring under a strangulated hernia on the left side.

On Saturday evening, the 24th, without any previous great exertion, she was seized with pain at the lower part of the abdomen, attended with vomiting. Soon after the commencement of this attack, she became sensible of

of a swelling just above the left groin, which she was sure had never existed before. The vomiting continued to harass her frequently, attended sometimes with hiccough, for about forty hours before I saw her. She had a stool soon after the attack began, but afterwards had no evacuation. She had taken several doses of a solution of magnesia vitriolata joined with tinct. opii; and injections had been used without effect.

I found the abdomen in a painful state, and somewhat tumified, but not tense. Frequent hiccough. Pulse 76.

The tumour was horizontally oblong, and at some distance from the symphysis pubis. It greatly resembled a femoral hernia, except in being situated above, instead of below, Poupart's ligament.

At twelve o'clock, eight ounces of blood were drawn from the arm; a clyster made with decoction of tobacco was injected; and cloths dipped in cold water were frequently applied. During the sickness produced by the clyster, I attempted to reduce the hernia, but in vain. At two o'clock, when the effects of the enema had ceased, I performed the operation.

I divided the integuments obliquely across

the middle of the tumour, carrying the incision downwards and inwards. The superficial fascia was merely a thin layer of cellular membrane. After making an opening into the inguinal canal, I introduced a director, and divided the aponeurosis of the external oblique muscle in a direction parallel to Poupart's ligament, extending the incision a little beyond the hernial sac on each side, leaving the inferior abdominal ring untouched. The hernial sac contained in its substance some layers of adipose membrane. I opened the sac in its middle part, where no adeps appeared, by cutting horizontally what I had raised with the dissecting forceps. Some serous fluid issued out on puncturing the sac, which was contained a portion of the ileo[illegible] about the size of a walnut; but no [illegible] The intestine was of a good colour, [illegible] extended upwards a little beyond the [illegible] abdominal ring, in which the [illegible] formed. This was so close, that I could [illegible] the tip of my fore-finger [illegible] and was therefore obliged to [illegible] of a director. I pressed this closely [illegible] the upper edge of the aperture, [illegible] [illegible] on each side held down the [illegible] I introduced the [illegible] of the

Case 7.

nocele knife just beyond the edge of the stricture, and then elevating its handle, I made a slight division of the part upwards and outwards, not exceeding 1-8th of an inch in extent. This small opening enabled me to reduce the intestine with ease. An unusual quantity of serous fluid issued out of the abdomen, and continued to flow even after I had made four stitches of the interrupted suture through the integuments.

The Patient expressed great pleasure at the relief which she had obtained, and told her surrounding friends, that the pain of the operation fell far short of her expectation.

A cathartic clyster was injected, and ol. Ricini ℥ss was given in the afternoon. 27th, As she had had no stool, and the abdomen was not easy, the same dose of ol. Ricini was ordered to be given every two or three hours, and a mild clyster to be injected every four hours, till stools should be procured. In the evening she had several loose evacuations, yet was not fully relieved. On the contrary, symptoms of inflammatory affection of the intestines continued for several days, during which she was again bled in the arm, leeches and a blistering plaster were applied to the abdomen, clysters were injected,

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by the integuments when he attempts to divide the ring.

In the scrotal hernia, the incision ought to be continued through the scrotum as far as the lowest part of the hernial sac. For since the vessels, contained in the spermatic chord, are sometimes so far displaced and separated by the hernia, that one or more of them have been found lying upon the anterior part of the sac; they can neither be discovered nor avoided, unless the scrotum be divided previously to the division of the hernial sac. LE DRAN says, "I have seen, though but once only, "the spermatic chord situated anteriorly upon "the hernial sac*." I have twice seen the vas deferens lying upon the anterior surface of the hernial sac. In one patient, an old man betwixt sixty and seventy, it lay before the lower part of the sac only: and when I had finished the operation, I found that I had divided it, by making the incision through the lower part of the scrotum and hernial sac at the same time; which I had done to avoid the pain of two incisions. Since that time, I have always divided the scrotum intirely before I cut through the sac.

The

* Gataker's Transl. of Le Dran's Operations, p. 95.

The different layers of the superficial fascia and cremaster muscle, which cover the hernial sac, should be divided in succession, while raised by the dissecting forceps, with the edge of the knife turned horizontally. This caution is peculiarly necessary when the hernial sac itself is to be opened, as the prolapsed intestine is sometimes in close contact with the internal surface of the sac, without any intervening fluid. This circumstance I lately saw in a case where the quantity of intestine was considerable.

As soon as the sac is opened, which is usually indicated by the issuing of a thin fluid, a director should be introduced, and the orifice sufficiently enlarged to admit the finger; the remainder of the sac may then be divided by the bubonocele knife. But I would advise the operator, in the scrotal hernia, to avoid carrying his incision through the hernial sac quite to its inferior extremity. For this is so connected with the tunica vaginalis testis, that the latter is in danger of being wounded, if the sac is divided quite to the bottom. I have known this happen; and, therefore, commonly leave a quarter or half an inch of the sac undivided: which practice I never saw attended with any inconvenience.

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If the neck of the hernial sac forms a stricture upon its contents below the external abdominal ring, as in CASE 15; the contracted part must be divided previously to the division of the ring. This circumstance, however, is a rare occurrence.

I have been in the habit of dividing the ring upwards and outwards, in this species of hernia; and never caused any hæmorrhage by this practice. But as the hernia does not always pass through the inguinal canal, but sometimes protrudes directly from the abdomen through the lower ring, in which case the epigastric artery runs near the outer side of the neck of the hernial sac; Mr. ASTLEY COOPER advises the division to be made directly upwards.

If, notwithstanding the hernia has descended below the external ring, it appears that no morbid stricture is made upon it by this part, but that the stricture is confined to the internal ring; the surgeon will find it, I think, the safest method of operating, to divide the aponeurosis of the external oblique muscle as high as the upper ring. He can then see clearly the part on which he is to operate, and may with ease make the incision either directly upwards, or upwards and

outwards *. I cannot avoid giving the preference to the latter method. For as the epigastric artery runs close to the inner side of the aperture, a very little inclination of the incision towards the linea alba might wound the artery, and endanger the life of the patient. Whereas the operator is certain, that when he divides the internal ring upwards and outwards, the artery is not exposed to the least danger, as it never passes on the outer side of the ring.

The best method, in my opinion, of guarding the intestine is, by conducting the curved bubonocele knife with the fore-finger, if that can be introduced within the contracted neck of the sac, without causing too much pressure upon the prolapsed parts; or with a deep grooved, and rather broad, director; the intestine being gently held down by one or two assistants. Whether the finger or director is used, the button only of the knife should be introduced beyond the edge of that part which forms the stricture. As the edge of the knife which joins the button is then placed horizontally,

* As the bolster of the truss, which should be worn after the cure, must be placed upon the upper abdominal ring; the enlargement of the lower ring, as here recommended, cannot increase the danger of a relapse.

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horizontally, a little elevation of the handle will generally produce a sufficient opening for the reduction of the hernia. But when the opening needs to be enlarged, the finger should always be introduced beyond the button, that no part of the intestine may be able to come near the edge of the knife.

I have generally found, that when the opening is sufficiently large to admit the whole finger into the abdomen with ease; there is then sufficient room to reduce both intestine and omentum, if neither of them is præternaturally thickened.

It has been proposed, by respectable authority, to divide the abdominal ring, and reduce the protruding parts, without opening the hernial sac. The reasons for adopting this practice in very large and old herniæ, which are given by Mr. ASTLEY COOPER* and Mr. LAWRENCE†, appear to me unanswerable. But in ordinary cases, I think, the advantages proposed by it are not to be set in competition with its dangers. The operation itself, as far as I am able to judge, must be much more difficult; the epigastric artery, when the operation is properly performed, is

* On Inguinal and on Congenital Hernia, P. 1st. p. 45.

† Treatise on Hernia, 160. 1. Ed.

is in little danger: it was never divided in any operation (of inguinal hernia) which I have performed myself, or seen performed by others; and it is by no means certain, that the failures in this operation arise from making an opening through the peritoneum. Whereas, not to insist upon the impossibility of reducing the prolapsed parts, which must sometimes arise from the contracted state of the neck of the sac, the increased bulk of the parts, or their adhesion to the sac and to each other; the uncertainty, which must almost always occur of the existence of a gangrene in the intestine or omentum (in which case reduction without opening the sac, must be considered as certainly fatal to the patient,) far outweighs, in my opinion, any advantages that can fairly be supposed to arise from the practice.

Femoral Hernia.

Femoral Hernia.

THE inferior border of the aponeurosis of the external oblique muscle of the abdomen, which has acquired the name of Fallopius's or Poupart's ligament, is attached externally to the fascia lata of the thigh, and internally to the fascia of the iliacus muscle, from the anterior and superior spine of the os ilium, as

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Femoral Hernia.

far as that part of the thigh where the great femoral vessels emerge from the abdomen. Betwixt the femoral vein and the pubis, the aponeurosis is turned back, nearly in a horizontal direction*; and becomes attached to the body and superior branch of the os pubis. This posterior projecting part has a sharp edge, in the form of a crescent, which is turned towards the femoral vein. It was first discovered and described by Don ANTONIO de GIMBERNAT, a Spanish surgeon; and, to avoid a disagreeable periphrasis, I shall call it Gimbernat's ligament†. It is is also attached to the lunated or falciform process of the fascia lata, so that they appear to be a continuation of each other‡.

Though the inferior border of the aponeurosis has the appearance of a cord, as it approaches the pubis; yet this is really formed by the sharpness of the fold which the aponeurosis makes at that part, added to the whiteness

* I say *nearly* in a horizontal direction, because there is some degree of obliquity in the position of this projection. That portion of it which lies at the angle of the pubis, being somewhat higher than its anterior portion, which joins the falciform process of the fascia lata.

† An external view of this part is given in Plates 5. and 6. An internal view in Plates 7. & 8.

‡ See Plates 5. & 6.

ness and thickness of its fibres. For if the aponeurosis is drawn upwards, the cord-like appearance vanishes, and we see only an even flat surface. This surface, which is the inferior one of Gimbernat's ligament, is strengthened by white ligamentous fibres, which give to the whole a great degree of firmness, though it still retains some degree of transparency.

The contents of the femoral hernia pass down from the abdomen into the thigh, on the inner side of the femoral vein. In this transit they carry along with them the peritoneum, which forms the hernial sac, and also a fatty cellular membrane which covers the entrance of the passage at the brim of the pelvis. This membrane, in conjunction with that portion of the sheath through which the lymphatic vessels chiefly pass, forms a covering to the hernial sac, which is called by Mr. ASTLEY COOPER, the *fascia propria*.

The hernia in its descent passes through a foramen, formed on its inner side by Gimbernat's ligament, on its anterior part by that ligament and the falciform process of the fascia lata conjointly, and on its outer side by that portion of the sheath which immediately surrounds the femoral vein. These parts,

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which are delineated in the annexed Plat (Nos. 5. & 6.) were found in the state he represented, in a subject which I examine some years ago, but since the publication the first edition of these *Observations*. Nothin was removed in the dissection, except th part of the fascia lata which covers the pect neus muscle, a few ligamentous fibres whic crossed one part of Poupart's ligament in a unusual manner, and the smaller branches the vena saphæna. The Drawing engrave in Plate 5. was made while the body was sup ported in a posture nearly erect; and that i Plate 6. while the body lay supine. Thes plates afford, I think, a good idea of th manner in which the stricture is formed i the femoral hernia. To make this idea com plete, it is only necessary to suppose the ape ture to be closely contracted upon a strangu lated hernia. The stricture will of course b increased by the pressure of the hernial sa and fascia propria; especially if these par have been thickened by the continuance the disease.

The pressure of a large lymphatic glan had, in this subject, pushed downwards Gim bernat's ligament, lower than it is usuall found; and had also stretched the parts ur

usually

usually; so that a similar appearance will not often be met with upon dissection. But then, this subject exhibits, in a striking manner, what is really effected by the femoral hernia; with this exception, that after the protruded parts have passed through the foramen, and formed a tumour upon the pectineus muscle, the tumour will in some degree repress the ligament through which it has descended. In this state I found it in a subject which I examined in 1806*.

The femoral hernia having passed through the foramen, rises above its edge; and, therefore, if a surgeon attempts to reduce it when strangulated, by pushing it upwards, he effectually frustrates his intention. The method of reduction which I have used with most advantage

* This Patient was a middle-aged woman, to whom I was called on the 13th day of the strangulation. I performed the operation with but little hope of success, as she had begun to vomit stercoraceous matter; and found both intestine and omentum in a mortified state, to the great surprize of the physician and surgeon who were attending, as there had been no external appearance of inflammation. Upon moving my finger round the protruded parts, for the purpose of discovering the femoral ring, a large quantity of liquid fæces issued from the abdomen. I merely removed the stricture, and left the prolapsed parts strongly adhering to the hernial sac. She died about five hours after the operation.

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advantage is this: after placing the patie upon the side opposite to that affected wi the hernia, with the body bent forwards, a the affected thigh brought to a right angle wi the trunk, and thrown across the oppos knee with the toes turned inwards; I pla the fingers of both my hands upon the upp part of the hernia, and then pull it gradual but gently, downwards. By this method t hernia is turned round the edge of the fal form process of the fascia lata, and, by co tinuing the pressure of the fingers, ascer through the foramen into the abdomen. this way I have, within the last half year (180 reduced two strangulated herniæ, which we rather unpromising, as the tumour in bo cases was small and hard, but in shape tra versely oblong. They had not, however, be strangulated many hours *.

The femoral hernia is usually of a round form, and less bulk when strangulated, th the scrotal hernia. I have repeatedly se it resembling an enlarged inguinal gland. is apt also to extend in a horizontal, rath than a vertical direction.

* Mr. ASTLEY COOPER is the first author with wh works I am acquainted, who has pointed out the t principle upon which the reduction of the femoral her ought to be attempted. Cooper on Hernia, Part II. p.

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Femoral Hernia.

It is not so frequent in males as in females. In almost all the instances of strangulated intestinal hernia in females, which have occurred in my practice, the hernia was of the femoral kind.

The stricture is also much greater in the femoral hernia, than usually takes place at the lower abdominal ring. This seems contrary to the experience of Mr. POTT, who, in his Treatise on Ruptures, advises the surgeon to reduce the prolapsed parts without any division. I cannot account for this diversity of sentiment, but by supposing, that his apprehension of danger from a division of Poupart's ligament, which was then supposed to be the part that caused the stricture, made him overlook his own experience. In his section on the *Femoral Hernia*, he repeatedly takes notice of the "considerable space be-"tween the os ilium and the os pubis;" mentioning it not only as the reason why a strangulated hernia may be "returned without "dividing the tendon," but also as accounting for the less frequent strangulation of the femoral hernia. These declarations surprize me exceedingly, coming from the pen of an author, who wrote so much from his own experience, as I apprehend Mr. POTT to have

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done. If we look at the skeleton, we shall undoubtedly see a considerable space between the os ilium and the os pubis; but if we take our ideas from a subject labouring under a strangulated femoral hernia, we shall rather wonder, from the smallness of the aperture, how a descent could have happened. I have now (1809) performed the operation for the femoral hernia sixteen times in the female, and twice in the male subject; and have always found great difficulty in introducing the tip of my fore-finger into the femoral ring, for the purpose of conducting the bubonocele knife. Nay, this introduction I have thrice found impracticable; and have been under the necessity of making use of a director *. In no case, in which I have operated, did there appear the least probability of reducing the prolapsed parts without previously enlarging the aperture.

The part to be divided, for removing the stricture in femoral hernia, lies deeper, that is, at a greater distance from the integuments, than the external abdominal ring. On this account

* There is less danger of bruising the intestine or omentum, by using a director with a groove 1-8th of an inch in diameter, than by employing the finger to conduct the knife, where much pressure is required.

account the division is made with more difficulty. But the surgeon must take especial care, to introduce his finger or director within that part where he finds the stricture to be the greatest; which, in this species of hernia, is the most interior part of the wound.

A very small division of the part which causes the stricture, is usually sufficient to enable the surgeon to reduce the prolapsed parts, if he keeps in mind the proper method of reducing the femoral hernia. And, considering the vicinity of the blood-vessels, and other important parts, to this species of hernia, the division of the femoral ring ought to be no greater than is necessary for the easy reduction of the hernia.

The direction in which the division of the ring is made, is of considerable importance. The great femoral vessels lie contiguous to the outer side of the neck of the hernial sac; and the epigastric artery runs at no great distance from it. The division ought, therefore, to begin at that part of the ring which is nearest to the symphysis of the pubis. I have usually made the incision upwards and inwards, though the manner in which I have expressed myself in the first edition may justly lead the reader to a different conclusion. I am sorry that

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that my expression was incautious, as it may produce the idea, that I approved of an incision directly upwards, without the limitation which I annexed to that direction. That this was not my meaning, will appear from my recital of that operation (which was the only one) in which I divided a blood-vessel while removing the stricture. In that case, "I "made the division of the ring directly upwards, and *not on that side of the intestine* "*which was most distant from the femoral* "*artery**." Whereas in my general directions I have said, "The finger, or director, should "not be introduced very near the great vessels; but on that side of the intestine or "omentum which is *nearest to the symphysis* "*of the ossa pubis*. The incision *may then* "be made directly upwards†." The reader will perceive, by an inspection of the annexed Plates, that an incision made according to this direction, would in effect be upwards and inwards.

M. GIMBERNAT has proposed to make the division of the femoral ring directly inwards. An incision in this direction is appproved of by Mr. LAWRENCE, and condemned

* 1st Ed. p. 159. † Ib. p. 153.

demned by Mr. COOPER. I must refer the reader to these authors, for the reasons on which their different opinions are founded. But, supposing no peculiar difficulty or danger to arise from a cautious incision in this direction; I still think, that the *manner* which M. GIMBERNAT proposes of performing the operation is improper. He advises the introduction of a grooved director through the ring, till "its point rests "upon the branch of the os pubis." The blunt pointed bistoury is then to be pushed to the end of the groove; and the operator, "employing both his hands at once, must "carry both instruments close along the "branch to the body of the pubis, draw-"ing them out at the same time*." M. GIMBERNAT acknowledges, that the bladder, if distended with urine, and the uterus, in a pregnancy of four months and upwards, are in danger of being wounded. The first of these accidents occurred in an operation, performed after this method, by a surgeon of some eminence, whom I am not at liberty to name. An operation during the fifth month of pregnancy may, as I have experienced,

* New Method of operating for the Femoral Hernia. Translated by Dr. BEDDOES. pp. 45, 46.

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experienced, be performed with safety, by making the incision upwards and inwards, with the precautions already mentioned. The intestine is also, I think, exposed to great and unnecessary danger, by the manner in which M. GIMBERNAT divides the ring; as there is nothing to prevent the intestine from sliding over the edge of that part of the knife which is introduced beyond the stricture.

As the obturator artery sometimes arises from the epigastric, and, instead of passing down on the outer side of the hernial sac to the foramen thyroideum, runs round the neck of the sac; a new mode of operating has been proposed, to avoid the danger of wounding the artery when it happens to take this course. An incision is to be made through the aponeurosis of the external oblique muscle, just above Poupart's ligament, and in a direction parallel to that part. Through this aperture a curved grooved director must be introduced, and, keeping it closely pressed against that ligament, must be pushed down through the ring. Upon this director the division is to be made.

If this deviation from the usual course of the obturator artery were more frequent than it

it appears to be, I should still think there was no occasion to have recourse to an operation, attended with so much difficulty and uncertainty as that above mentioned.

In this procedure the patient must be subjected to the pain of a double operation; one below, and another above, Poupart's ligament. The director must be thrust down betwixt the parts forming the stricture, and the hernial sac, which often adhere firmly to each other. In this attempt, the course of the director must be often interrupted by the projection backwards of Gimbernat's ligament. And after all, the operator cannot be certain that the director has passed before the obturator artery; and, consequently, cannot know, that he has gained any advantage by this painful and troublesome process.

This subject appears to me to be somewhat obscured, by an ambiguous use of some of the terms employed. We speak of the division of the femoral ring as being made *upwards*, when we make the incision at its anterior part: and as our patients, during the operation, lie in a supine posture, the incision is, in that position, made upwards. But since the parts, which usually form the stricture, are placed horizontally

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horizontally in an erect state of the body, the incision must in reality be *horizontal.* The annexed Plate, No. 6. fully explains my meaning. As the subject lay supine when that Drawing was taken, the part which occupied the space betwixt the ring and Poupart's ligament, though apparently vertical, was in truth horizontal. Supposing then, that in this subject the obturator artery had passed round the neck of the sac, but at such a distance from the ring, that the button of the bubonocele knife could pass freely betwixt it and the stricture; it is evident, that in making the incision *upwards*, as it is called, the knife would have made no greater approach towards the artery at the end, than at the beginning, of the incision. It is true, that the posterior attachment of the aponeurosis of the external oblique muscle, (Gimbernat's ligament) is rather higher at the angle of the pubis, than at the part where the stricture is formed; yet the ring may, I apprehend, be sufficiently divided by an incision strictly horizontal.

This appeared to be the case in the subject from which the Drawing was taken for Plate 7. The obturator artery ran parellel with Poupart's ligament, and was connected

with it by cellular membrane; so that if a femoral hernia had taken place in this subject, the artery would have gone round the neck of the sac, in its passage to the foramen thyroideum. It was removed from this position, as it obscured the view of Gimbernat's ligament; and therefore its natural place does not appear in the Plate. But it lay, before this removal, at such a distance from the edge of the ligament, that the knife, in a horizontal division of that part, would not have come near the artery.

The obturator artery may, therefore, surround the neck of the sac, and yet lie at such a distance from that part of the neck where the stricture is made, as to afford sufficient room for an incision without injuring the vessel. This appears to me to be the case, even in Dr. BARCLAY's preparation, if I may judge from the plate in Mr. COOPER's Work, (Part 2d.) which contains, I doubt not, an accurate delineation of the subject. There appears to be a space between the artery and the ring, sufficiently great to afford a safe passage for the button of the knife, for the purpose of making a horizontal incision.

If the operator, after dividing the ring, proceeds to a further division of the neck of the sac,

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sac, he will then in reality cut *upwards*; the obturator artery, in this unusual co will be in danger. But such a divisi the neck of the sac is, I presume, n necessary.

With respect to a division of the spe tic and epigastric arteries in this opera I will relate all that has occurred in own practice. No hæmorrhage took p in any of the operations, which I perfor for the femoral hernia in males. I be allowed, therefore, to say that the s matic artery was not divided in those c The following Case is the only one in w I wounded any vessel of consequence, w dividing the part which formed the strict The accident occurred in the early of my practice, before I was aware small an incision was necessary for moving the strangulation in the fem hernia.

CASE 9.

Case 9. In 1764 I was operating upon an Woman, for a femoral hernia: and, attend chiefly to the convenience of introducing p of my fore-finger, I made the division

the ring directly upwards, and not on that side of the intestine which was most distant from the femoral artery. The incision was also longer than I now judge to be necessary; for, in my notes made soon after the operation, I stated, that I judged it to have been about half an inch in length. The consequence was, that I opened an artery, which bled freely; but of which, neither I, nor the gentlemen who assisted me at the operation, could discover the orifice. Mr. SAM^L SHARP supposed it to be an easy matter, to take up with a needle any vessel which might be wounded in this operation; but this I found to be impracticable. I applied a small piece of dry sponge upon that part whence the blood issued; and upon this I placed several other pieces, till I had raised them so high, that the common bandage would make a compression on the bleeding part. During the first day after the operation, an assistant was directed to keep a constant pressure with the hand upon the pieces of sponge. The hæmorrhage ceased by this method, and did not return. I began to remove the exterior pieces of sponge after a few days, and gradually insinuated some lint under that piece which lay in contact with the wound. On

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the 14th day after the operation, I removed the last piece of sponge.—The wound was cicatrized at the expiration of five weeks.

When the stricture made upon the hernia is sufficiently removed, the next stage in this operation consists in the disposal of the prolapsed parts. Here several important considerations present themselves, chiefly relating to the management of the omentum.

After unfolding the omentum, in the entero-epiplocele, I separate it from the intestine, and also the folds of intestine from each other, if they have contracted an adhesion, by gently drawing them asunder. This adhesion I have often seen; but, I think, have always been able to effect a separation of the adhering parts, without the assistance of any instrument; and without injuring the intestine, if a gangrene had not taken place. When the omentum adheres to the hernial sac, a separation can seldom be effected without the assistance of the knife. I always reduce the intestine, if it is in a sound state, before the reduction of the omentum, which is contrary to the practice recommended by Mr. POTT. My reason for acting thus, is an opinion, that the intestine will bear a protracted pressure,

without

without injury, better than the omentum. When there is a necessity for cutting off a portion of omentum, or separating it from the hernial sac, or taking up any of its divided vessels; these operations may be executed with greater safety after the reduction of the intestine.

I once saw the coats of the intestine so thickened in a scrotal hernia, that it resembled a lump of muscular flesh, rather than a portion of intestine. I was obliged in this case to make a large division of the abdominal ring before I could effect the reduction; and even then the intestine was not reduced without difficulty. After several ineffectual attempts, I succeeded by the following method: I stood with my right side to the left of the patient; then placing my fingers round the extremity of the intestine, and directing them upwards behind it, I gently pushed up the highest part of the intestine, while the palm of my hand supported the most depending part. This method I have found useful in several cases where reduction is difficult.

I must refer my readers to the works of other authors, for an account of the treatment of the intestine, when it is found in a gangrenous state. I have seen several such cases,

[illegible] Hernia.

[illegible] in general [illegible] upon the tre[illegible] experience.

[illegible] of two Cas[illegible] may accou[illegible] by autho[illegible] intestine [illegible]

[illegible] Man, aged 3[illegible] in the scro[illegible] having exerte[illegible] [illegible] He di[illegible] the scrotum; bu[illegible] he found th[illegible] and painfu[illegible] He sent for [illegible] laxativ[illegible] to th[illegible] eighteenth day o[illegible] the disease I was desired to visit him. Hi[illegible] bowels had been opened by the laxative medicines. He had also taken some powders with crystals of tartar and nitre, and an opiate a[illegible] bed-time, without which he could not sleep[illegible] The scrotum continued swelled; and th[illegible] inflammation extended over the integumen[illegible]

upo[illegible]

upon the right side of the hypogastrium. His pulse was rather tense, and beat about ninety strokes in a minute. I advised a repetition of the bleeding and cooling medicines, with the opiate at bed-time. On the twentieth day, the tumour was more prominent a little below the abdominal ring. On the twenty-first it burst, and discharged purulent matter mixed with fæces. Several orifices were formed in the scrotum; and in the course of a few days, the lowest of them became enlarged to about the breadth of a sixpence, by the sloughing of the scrotum. Upon pressing the hypogastrium, stercoraceous matter, mixed with air, issued out through the scrotum. Little or no doubt now remained, that the tumour of the scrotum was formed by a hernia of the intestine, which had burst in several places. This idea was confirmed by the subsequent detachment of a portion of intestine, about an inch and a half in length, and of considerable firmness. Upon washing the part cast off, I could discern its villous coat. The wound was soon filled with granulated flesh; the discharge of fæces ceased; and a complete cicatrization took place in the course of two or three weeks, as I was informed; for I did not visit the man

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Case 10.

CHAP. V. after the wound was so far healed as to discharge no more fæces.

CASE 11.

Case 11. September 25th, 1801, CALEB BREAKS, of Wibsey, aged 40 years, was admitted into the General Infirmary with a strangulated femoral hernia on the right side. During the last five or six years, he had been accustomed to an occasional descent in this part; but had always been able, before this time, to reduce the hernia. He perceived the swelling as he was walking on the 23d instant; and being unable to reduce it as heretofore, and feeling much pain in the affected part, he consulted a surgeon, who used considerable efforts to effect the reduction.

Mr. LOGAN, in my absence, visited this Patient for me at his admission, and found the hernia in a tender and somewhat inflamed state. He directed a clyster to be injected, made with the decoction of tobacco; and the frequent application of cloths dipped in cold water.

I saw the Patient at ten in the evening. He was then under the influence of the tobacco clyster. He complained of sickness,

had

had frequent eructations, and some degree of cold perspiration. His pulse, which had been at a hundred and twelve at his admission, was now reduced to fifty-eight. The abdomen was somewhat inflated. His tongue was white. The inflamed appearance of the hernia was, according to my information, rather abated.

As he had rejected nothing which he had taken since the commencement of the strangulation, and as he had had an evacuation by stool, there was reason to think, that the course of the fæces through the intestinal canal was not interrupted. It was judged proper, therefore, to try the effect of purgative medicines for removing the tumefaction of the abdomen and inflamed state of the hernia. I directed pulv. jalap. ℈ j. calomel. gr. v. to be given, in the form of pills, every three or four hours, till three doses should have been taken, unless a free evacuation should in the mean time take place. A purging clyster was also ordered to be injected after the second dose of the pills. The application of the cold cloths was directed to be continued.

26th, seven A. M. He had had a copious evacuation after the clyster, and felt himself much relieved. The tumefaction of the ab-

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domen had intirely subsided; but the integuments appeared inflamed to the distance of two or three inches from the tumour, which was round and small. I directed the application of a warm poultice of bread and water*, instead of the cold cloths; and the injection of another clyster at noon. Pulse ninety-four.

Six P.M. The Patient had not been relieved by the clyster, which returned without fæces. The abdomen was again a little tumefied, and the pulse was at a hundred. I ordered ol. ricini ʒ ss. to be given every four hours till a stool should be procured.

27th, nine A.M. He had had a stool in the evening soon after my last visit, and another before ten, on which account he had taken only one dose of the ol ricini. I found him easy. Pulse at ninety. Abdomen quite flat. Inflammation of the integuments near the hernia subsided.

He continued to be open in his bowels, and the

* The application directed in this case may seem inconsistent with what I have said, p. 127, on the inutility of poultices in the strangulated hernia. But they were now applied to abate the inflammation of the integuments (in a case which appeared, at that time, to be a mere strangulation of the omentum), and they were useful for that purpose.

the tumefaction of the abdomen did not return; but after a few days the tumour formed by the hernia began to enlarge, and this increase of bulk was attended with some degree of fever.

October 2d. The integuments being now rendered thin by the formation of matter in the tumour, I divided them in a crucial form; and discharged a dark coloured, and very offensive matter, mixed with air. There was a small portion of intestine in a gangrenous state, though still inflated with air; and some remains of omentum, which had chiefly become dissolved by putrefaction and suppuration. The cavity containing the matter was much enlarged, and membranous partitions were formed in two or three places. These were all divided, and the wound was dressed as a common abscess.

3d. The poor man was much relieved by the opening made yesterday. His pulse was at eighty-eight. The contents of the cavity were yet black, and extremely fetid. The intestine had become flaccid. A fermenting cataplasm was applied for a day or two.

Some yellow slimy matter appeared now and then in the wound, and had the smell of intes-

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intestinal fæces; but there was no other appearance of fæcal matter.

Case 11.

7th. The mortified part of the intestine, and the small remains of omentum, were intirely cast off; and the surface of the sore was covered with good granulations.

The Patient recovered very well; and the wound was completely cicatrized without any remains of the hernia.

From all the circumstances of these Cases, there is little reason to doubt, that the prolapsed portion of intestine was the head of the colon. A similar case is described, and completely illustrated, in the *Medical Observations and Inquiries*, vol. iii. article 8th. The patient, who was the subject of this case, had a scrotal hernia on the right side; which, upon being strangulated, and neglected, was brought into a state of gangrene. A portion of intestine was cut off by the surgeon, who then visited the poor man; and the fæces passed through the wound for some time. A complete cure was, however, obtained; and the man lived twenty-five years afterwards, without any return of the hernia. After his death the parts were examined; when the caput coli and appendicula vermiformis were only found

found wanting. The remaining extremity of the colon adhered to the abdominal ring, and afforded no obstruction to the passage of the fæces. CHAP. V.

Upon comparing these Cases, and considering the extreme danger that attends a gangrene of any part of the intestinal canal through which the fæces must pass; I am induced to conjecture, that many recoveries, after a gangrene of the intestine, may have been owing to the same cause which preserved the life of the Patients mentioned above. It is remarkable, that authors who have related the cases of patients, whose prolapsed intestine was gangrened, have generally neglected to relate on which side of the body the disease subsisted. Future observations may shew, how far the circumstance I have mentioned may be considered as a cause of recovery in hernia with gangrene of the intestine.

The proper treatment of the omentum is an important part of this operation. If the omentum is sound, and without adhesion to the hernial sac, it ought undoubtedly to be replaced within the abdomen; but the reduction should be made with the greatest delicacy, as the tender texture of the omentum makes

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it liable to be bruised with very little force; and slight injuries of this part will bring on inflammation and gangrene. Too much caution cannot be used when a large portion of it is prolapsed.

Mr. POTT recommends the reduction of the omentum in all cases. If it adhered to the hernial sac, his practice was "either to dissect "its adhesions, or to retrench a part of it." vol. ii. pag. 107. If it was gangrened, he "always made the excision in the sound part." He adds, that "any portion of the caul, "which it may be thought necessary to re-"move, may safely be cut off." ib. 118, 119. Notwithstanding this great authority, I have been (perhaps unreasonably) apprehensive, that wounds of the omentum were not so harmless, as they are here represented to be.

When the portion of omentum, which is prolapsed, is in a sound state, of little bulk, and strongly adherent to the hernial sac; and when, from inquiries made of the patient, we learn, that this small part has been prolapsed for many years, without disturbing the functions of the abdominal viscera; we may fairly conclude, that we shall not injure those functions by leaving such a portion in its prolapsed state. In such a case I have suffered the

omentum

omentum to remain; and have found no difficulty in healing the wound, nor any injury afterwards from the application of a well adapted truss. In one patient I left a portion which I judged to be about two ounces avoirdupois in weight, which was the largest portion that I have suffered to remain. The wound was healed at the expiration of six weeks after the operation. The pad of the truss, which was afterwards applied, consisted of an oval ring, made exactly to the shape of the remaining tumour. This kind of truss sat easy upon the patient; and I suppose answered very well, as I have heard nothing from him to the contrary, though it was applied in the year 1772. He lived about thirty miles from Leeds; but the operation was performed upon him at a small alehouse betwixt Leeds and Wakefield, where he was seized with the strangulation as he was travelling.

The first instance in which I deviated from this mode of practice was in the year 1789. I did it on the authority of Mr. POTT; being desirous of trying the comparative merits of these two different modes of practice. The case terminated fatally; and as it contains some circumstances worthy of notice, I shall give

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give it at large, that the experienced reader may be better enabled to judge, whether the reduction of the omentum contributed to the fatal event.

CASE 12.

Case 12. February 1st, 1789. I was called in the afternoon to visit ROBERT WALKER, a poor man, aged 37 years, who was in great pain from a strangulated hernia. He had been subject to the hernia for many years. It had several times been strangulated for a few hours, according to his account, and could never be intirely replaced within the abdomen. The strangulation at this time had commenced the preceding evening at eight o'clock, soon after which he had a stool, but afterwards had no evacuation. He vomited sometimes, and had a little hiccough. His belly was somewhat tense, but not much inflated. His tongue rather white. His pulse soft and calm, at sixty-four. The lower part of the tumour in the scrotum was soft; the upper part was hard. The scrotum was so thin, that I could feel the omentum within the hernial sac.

I ordered a clyster, made with two drachms of tobacco boiled in a pint of water for ten minutes, to be injected; and cloths dipped in cold

cold water to be assiduously applied. I did not bleed him, as his pulse was so soft and calm. The clyster had a powerful effect, producing great sickness and vomiting, with a cold sweat, during which the pulse sunk to fifty-six. I attempted during this languor to reduce the hernia, but in vain; not the least motion was produced by my attempts.

I now strongly recommended the operation; and advised the poor man to go into the Infirmary, as the accommodations of his own house were very bad. My advice did not prevail; so I gave him in the evening fifty drops of tinct. opii, which intirely removed his pain and vomiting. The next day the poor man consented to go into the Infirmary, but not till towards evening. The pain had now returned, the abdomen was more inflated, and tense, and the tumour was larger. The operation was immediately performed.

Not the least quantity of fluid issued out when the hernial sac was opened. A large portion of omentum, and a smaller of intestine, were the contents. The former appeared to have lain a considerable time in the hernial sac; for it not only adhered to the sac in many places, but also had formed in it several small pouches, in which it lay depressed

beyond

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Case 12.

beyond the general level of the sac. The intestine was dark-coloured, but had contracted no adhesion. The stricture was not formed by the abdominal ring, but intirely by the neck of the hernial sac, into which I could not introduce the least portion of my finger *.

I was obliged to divide the ring pretty high, that I might with safety divide the neck of the sac; and this last division was effected by cutting along the groove of a director, till I had made a sufficient aperture for the introduction of my finger. As the omentum adhered to the sac by little cords, which might easily be divided, I separated it from the sac, and reduced it immediately after the intestine. This was easily reduced, but the reduction of the omentum gave some trouble. The omentum did not feel brittle, nor appear to be in a gangrenous state. When the contents of the hernia were reduced, some serous fluid issued out of the abdomen. A purging clyster was ordered to be injected; and he was directed to take half an ounce of castor oil every two hours, till a free evacuation should be produced.

February

* The stricture, which I then judged to arise from the neck of the hernial sac; I now apprehend to have arisen from the internal abdominal ring.

February 3d. I found him in a good state at noon. The clysters had procured a stool; and after the second dose of the castor oil, he had had three evacuations. His pulse was at eighty-six.

Notwithstanding these favourable appearances, the symptoms of inflammation, such as vomiting, soreness of the abdomen, with considerable pain, returned in the evening. Eight ounces of blood were taken from his arm, a clyster was injected, the ol. ricini was repeated, and a large blister was applied to the abdomen. These means afforded no relief, and the poor man died at seven in the morning.

In the evening I examined the contents of the abdomen. The intestines appeared in many places inflamed, and adhered to each other universally. That part which had been strangulated was of a darker colour. The omentum did not cover the anterior surface of the intestines as usual, but passed down on the left side of the abdomen, collected together like a thick rope. The strangulated portion was now become very brittle, and was dark coloured at its inferior part. Bloody serum was contained within the abdomen.

Though I think it highly probable, that some degree of inflammatory affection had

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nen the portion of omentum found in ernial sac is, from its diseased state, unfit duction; it may be tied, cut off, or left wound to separate spontaneously. I offer what I have observed respecting three different methods of treatment.

e first has, I believe, been done without g fatal to the patient. LE DRAN and have given instances of it. But if the is made so tight as to destroy the cir- on in the part below, (which is that kind of which I am now speaking) the prac- extremely dangerous, and ought, in my on, to be laid aside. Mr. WILMER ap- nds no danger from it; but his opinion, instance, is contradicted by expe- e. He says, "When it is necessary to ove any part of the omentum, there ll be no occasion to pass a ligature; but the surgeon chooses to do it, if he is reful that no part of the intestine is cluded, it is not probable that any par- ular inconvenience will arise from it *." nsieur PIPELET has written an excellent noir on this subject †, in which he has shewn

* Observations on Herniæ, p. 78.

† Memoires de l'Academie de Chirurgie, tom. iii. 394.

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shewn from experience the danger of this practice. But the most decided condemnation of this practice occurs in the writings of Mr. POTT *. He has, with great candour, related the fatal effect of such a practice in a patient of his own. I saw him perform the operation (to which I apprehend he alludes) in the year 1758. The patient was in perfect health; and had an epiplocele, which was only troublesome by its bulk. The omentum was quite sound. A tight ligature was put upon it, and the part below was cut off. The symptoms which succeeded are thus accurately described. "I have seen a whole train "of bad symptoms, such as nausea, vomiting, "hiccough, fever, anxiety, restlessness, great "pain in the belly, and an incapacity of sit- "ting upright, or even of moving without ex- "quisite pain, precede the death of a man, "whose omentum was tied merely because "of its enlargement," &c. ib. Surely no surgeon, who has read this account, can, with a good conscience, apply a tight ligature upon any considerable portion of omentum in a sound state.

There is, however, another method of employing the ligature, which is not attended with

* POTT's Works, octavo edit. vol. ii. p. 117.

with the danger above described. I made use of it in the following Case with success.

CASE 13.

HENRY TAYLOR, of Thornton, about thirty miles from Leeds, a stout man, aged thirty-four years, had been subject to a scrotal hernia for some years, which had several times been reduced with difficulty. It became prolapsed and strangulated in the evening of May 5th, 1789. He was bled, had clysters injected, and was put into the warm bath. On the evening of the 7th he set off for Leeds, to put himself under my care. He travelled all night in a cart, and arrived at Leeds on the morning of the 8th. He was much fatigued with his journey. I procured a lodging for him, and put him to bed immediately. His pulse was at one hundred, rather full and hard. He had great pain in the hernia and abdomen; both which were so sore, that he could scarcely bear them to be touched. He had a frequent vomiting, to allay which he had drunk some gin and water upon the road. I took a pound of blood from his arm, and injected a clyster made with the decoction of tobacco. He became rather easier, but there was no diminution of the

Case 13.

CHAP. V.

Case 13.

tumour. I applied cloths dipped in cold water, and threw up the fume of tobacco per anum, without success. At noon I performed the operation. No fluid issued from the hernial sac when first opened. A large mass of omentum lay in the sac, including a portion of intestine, in such a manner, that it could not be seen till the omentum was expanded. The omentum was very livid, or rather black, on its exterior surface. Some fragments of it within appeared sound. The sound and unsound parts were intermixed, so that there was no line of separation between them. It did not feel brittle. One part of it was compact and smooth like the mesentery. A filament went off from this part, and adhered to the peritoneum just within the ring. The intestine was inflamed, and had contracted an adhesion to the omentum, about two inches in length and one in breadth. That part of the omentum which adhered to the intestine was quite black; but was easily separated from it by gentle pulling. The stricture from the abdominal ring was not great, for I could with ease introduce my finger for the purpose of conducting the bubonocele knife. There was no stricture from the neck of the hernial sac. The intestine was reduced with ease.

The

CHAP. V. Case 13.

The great difficulty in this case was, how to dispose of the omentum. Its bulk was such, that when taken out of the hernial sac, it appeared, after the reduction of the intestine, to be more than double the quantity, which one could suppose capable of being compressed within the compass of the sac. It was thought, by some persons who were present at the operation, to be six or eight ounces in weight. The reduction of so diseased a mass was out of the question. To make a tight ligature upon it would, as I apprehended, be in effect to destroy my Patient. I was by no means satisfied to make so large a wound in the omentum, as would be necessary to extirpate all that was prolapsed; and the diseased parts were so intermixed with those which appeared to be sound, that it was impossible to make a separation between them. Indeed, there was such a gradation between the parts which were clearly mortified, and those which were as clearly in a sound state, that I could not have drawn the line of separation had I attempted it. Pressed with these difficulties on every side, I determined to leave the omentum as it was; covering it with lint spread with digestive, and over all a large pledget of tow spread with the same.

CHAP. V. Case 13.

My Patient felt himself easy after the operation, and had no more vomiting. I ordered a purging clyster to be injected, and half an ounce of ol. ricini to be given every two hours. Some fæcal matter was discharged with the clyster. He took five doses of the ol. ricini, and then ceased taking it. He had five or six liquid stools before the next morning, but did not discharge any figured excrement. His pulse intermitted in the evening: but as he had very little pain, and no vomiting, I was not uneasy; having several times observed such intermission, in acute diseases, to be a symptom of saburra in the primæ viæ, and to go off after a free evacuation.

10th. He had passed a quiet night. Pulse regular, and at ninety-six. The discharge by stool having ceased for some hours, I directed a repetition of the ol. ricini. I desired my Patient to take no solid food, but to live intirely upon broth, barley water, gruel, and the like.

11th. Pulse from seventy-six to seventy-eight, in the morning. From this time, his bowels were kept open by the continued use of ol. ricini, given as occasion required. His pulse had now and then a little intermission; but this symptom never continued long.

About

About one third part of the omentum was cast off in a gangrened state; but two-thirds of it, at the least, remained sound; and in the course of a few days this part began to have fresh granulations on its surface.

Notwithstanding the advantage which I seemed to have gained, by avoiding the hazard of any operation upon the omentum; yet it was easy to foresee, that great difficulties would arise from so large a mass of granulated flesh (for such it soon became) remaining in the wound. It was impossible to compress it within the lips of the wound; and as the integuments now lay behind it, there was no hope that they would ever advance to form a natural covering to so prominent a part. In ruminating upon the different methods of treating this incumbrance, I recollected that I had often seen deep fissures made in sound parts of the body, by the gradual pressure of any sharp-edged substance applied without such design, and effected without much pain. I therefore determined to attempt cutting through the omentum, close to the abdomen, by the gradual, yet very gentle, pressure of a ligature. On the 7th day after the operation, I began to apply a ligature of waxed silk, but in so gentle a manner as to give no pain. The

application

CHAP. V.

Case 13.

application produced a bluish appearance in the tumour, and made it feel to the Patient a little benumbed. The ligature was tied in such a manner, that the Patient could at any moment unloose it; and he was directed so to do, if he should feel any pain, sickness, or nausea.

On the first day after this application, he had some shivering, and uneasiness in his belly. His bowels were likewise moved with greater difficulty by the ol. ricini. These symptoms were attributed to the ligature, which was immediately untied. But upon inquiring into all circumstances, I found that he had, contrary to my directions, eaten some flesh meat that day, which I imagined might have caused some uneasiness. After two or three loose stools, these complaints ceased. I urged the necessity of a more strict attention to his diet; and renewed my request that he would confine himself to broth and light pudding during the use of the ligature.

I renewed the application every day, insinuating dossils of lint into the fissure; and on the 17th day of this process I cut through the small remaining part of the omentum, which had now been nearly divided by the ligature. An artery in the centre of the remaining part

was become so large as to require the use of a needle and ligature. By this gentle method I safely removed the mass of omentum; after which the wound healed very speedily, and my Patient returned home six weeks after the operation, the wound being then nearly cicatrized. The portion of omentum which I cut off weighed five ounces and five drachms avoirdupois. CHAP. V. Case 13.

The excision of a portion of omentum in the sound part has been practised, and recommended by some eminent surgeons. Monsieur CAQUE, chief surgeon of the Hotel Dieu at Rheims, says, that in nine operations he had cut the omentum in its sound part without ligature, and that no unfavourable accident had resulted from this treatment*. Mr. POTT speaks in the strongest terms in favour of this method. He says, "The fear of hæmorrhage "is almost, if not perfectly, without foundation, as I have several times experienced." And again, "I will not pretend to say, that "there never was a dangerous or fatal flux of "blood from the division of the omentum "without ligature; but I can truly say that "I never saw one; that I have several times

"cut

* Mem. de l'Academie de Chirurgie, tom. iii. p. 407.

" cut off portions of it without tying, an
" never had trouble from it of any kinc
" though I have always made the excision i
" the sound part; and that, from the succes
" which has attended it, I shall always cor
" tinue to do so, whenever it shall become ne
" cessary." Vol. ii. pp. 116. 118. I hav twice, and only twice, cut off a pretty larg portion of omentum in its sound part, in th operation for the strangulated hernia, withou securing the vessels which were divided; and am sorry to say, that in both cases the reduc tion of the remaining omentum was followe by hæmorrhage, which nearly proved fatal t one of my Patients. I will relate the Cases.

CASE 14.

Case 14. Sept. 16th, 1795. MOSES BRADFO aged 61 years, was brought into the Gen Infirmary at Leeds, with a strangulated tal hernia, on the right side. He had subject to the hernia for several years. strangulation had commenced in the for of the preceding day. He had vomitin cough, fulness and tension of the ab His tongue was clean and moist. H at seventy. The tumour was very te the ring. The operation was perfc

three in the afternoon. The contents of the hernial sac were a portion of omentum in a sound state, and a portion of intestine highly inflamed. The omentum was of a pyriform figure. Its broad part adhered to the bottom of the sac, and was about the size of an ordinary pear. The upper part had contracted no adhesion with the sac, and was about the thickness of one's little finger. There seemed no reason to doubt that the omentum had remained in this state for some years.

I could not introduce the tip of my forefinger, for the purpose of dividing the ring and neck of the hernial sac, but was obliged to make use of a director. After an opening was made, capable of admitting my finger to pass into the abdomen with ease, I could not still reduce the intestine, until I had divided the omentum, which I did at the lower part of its neck. Mr. LOGAN held its upper part between his fingers for a short time after the division, to see whether it would bleed; and as no hæmorrhage took place, I reduced it, and afterwards replaced the intestine with ease. I removed the remaining part of the omentum which adhered to the sac.

No sooner was the reduction of the intestine completed, than florid blood began to flow

morning liquid fæces, mixed with air, were discharged through the wound. I directed
14. a clyster to be given night and morning, made with a pint of water gruel, and a spoonful of treacle. I also directed his diet to be intirely liquid, as milk in various forms, broth, &c. and forbad him to eat bread, pudding, or rice.

November 16th. Since the last report, the size of the wound, and the quantity of fæces discharged by it, have continued to diminish. He has had all along regular stools per anum; except that twice during this period the regular discharge was somewhat suppressed, at which times he complained of pain in the belly. A dose or two of the ol. ricini, with the clysters, relieved him. Upon making a strict inquiry in the ward, I found that he had at both these times taken some solid food. The wound is now nearly cicatrized a small aperture only remaining, through which a thin curdled matter sometimes issues. He is otherwise in good health and spirits.

Dec. 11th. He was discharged cured.

A retention of urine accompanied the strangulation in this case, which obliged me to have recourse to the catheter during the two

days. After that time his discharge of urine was natural. CHAP V.

I did not see this poor man after his dismission from the Infirmary; but was informed, that he was soon after seized with violent pain in the abdomen, attended with vomiting, and died on the second day of his illness. Case 14.

CASE 15.

December 26th, 1797. I was desired to visit WILLIAM LANGDALE, a journeyman coachmaker, aged thirty-five years, who was said to be violently afflicted with the colic. He complained of great pain in his belly, which was aggravated by fits, and was chiefly felt a little below the navel. He vomited every thing he took, and was costive. Upon inquiry I found a tumour in the scrotum, of which the man had taken no notice, not apprehending it to have any connexion with his disorder. I informed his friends of the true nature of his complaint, and advised them to convey him immediately to the Infirmary. My advice was followed; and at two o'clock I visited him there, in consultation with Mr. LOGAN. Case 15.

The man informed us, that a swelling similar to that which we now found, though not so large, had at different times affected him.

This he had always before been able to re
duce; but did not remember to have per
ceived any guggling noise during the reductio
of the prolapsed part. He seemed quite igno
rant of the nature of his disease; but assure
us, that he had not a constant swelling in th
scrotum or groin. The present seizure tool
place soon after he rose out of bed, at tw
o'clock in the morning of the preceding day
From that time he had had frequent vomiting
with great pain in the abdomen, but not muc
pain in the tumour. The abdomen had no
a considerable degree of tension. His tongu
was white, and furred. His pulse strong, an
at eighty-six.

The tumour was of an unusual form. Th
part of it which lay in the groin had mo
resemblance to a thickened spermatic cho
than to an ordinary hernia. As the Pati
repeatedly affirmed, that he had never
ceived that guggling noise, which usu
accompanies the reduction of a prola
intestine, when upon former attacks h
repressed the rupture; and as, at this
the pain was chiefly felt a little belo
navel; we thought it not improbable t
hernia might be an epiplocele. We
mined, however, to try the effect of h

and the tobacco clyster, before we proceeded to the operation. A pint of blood was immediately drawn, by opening a vein in each arm at the same time; and a clyster made with the decoction of tobacco was injected.

We visited the Patient again at four o'clock; and finding no alteration for the better, I performed the operation. The hernial sac contained a good deal of serous fluid; besides a pretty large portion of intestine, inveloped and completely covered by omentum. The neck of the hernial sac, below the abdominal ring, formed so considerable a stricture, that I could not introduce the tip of my finger to guide the curved bistory. It even required some force to introduce a director suitable to this occasion. After dividing the neck of the hernial sac, I could easily introduce my finger within the abdominal ring, which I also divided sufficiently to permit the reduction of the intestine.

The omentum was become gangrenous; and in one part adhered pretty strongly to the intestine. That part of the intestine, which had been inclosed in the stricture made by the neck of the hernial sac, appeared as if it had been tied round by a string. The colour was so much altered by this impression, that we

CHAP. V.

Case 15.

were under considerable apprehension of a separation taking place at this part. I endeavoured to reduce the intestine with all possible gentleness, after I had separated it from the omentum: yet, notwithstanding all the caution I could use, I was much afraid that the operation would not preserve the life of my Patient, even if no injury should arise from the morbid state of the omentum.

I had always been afraid of large wounds of the omentum: but as the excision of a gangrened portion, by cutting through the adjacent sound part, stood so strongly recommended by Mr. Pott, of whose judgment I had a very high opinion: I determined to follow his example in this instance. I cut off, therefore, all that had a morbid appearance; and the remainder, as soon as I ceased to hold it, retired spontaneously into the abdomen.

A hæmorrhage immediately ensued, which, from the distinct colours of different parts of the stream, evidently consisted both of arterial and venous blood. The discharge of blood diminished so much in a short time, that I returned to unite the divided integuments, through the whole extent of the wound, by the interrupted suture. I ordered a purging clyster to be injected: and half an ounce of

el.

ol. ricini to be given every three hours, till a free evacuation should be procured. CHAP. V.

I visited the Patient about two hours after the operation, and found him asleep. Case 15.

At ten in the evening I was called to him, on account of a violent hæmorrhage which the nurse had just discovered. The blood had flowed through his bed upon the floor. I immediately cut out the ligatures which were in the upper part of the wound, both to give a free issue to the blood, and also to enable me to know the true state of the hæmorrhage. The blood which now issued out appeared to be venous. It flowed irregularly, sometimes ceasing for ten or twelve minutes. I applied cloths dipped in cold water to the abdomen and scrotum, and kept dabbing the wound with a cold wet sponge. His pulse was weak, and at a hundred and eight. His countenance more pale. The belly less tense. He had had one stool. I left him at half past eleven, as the hæmorrhage had then abated, desiring the House Apothecary and my senior Pupil, who remained with him, to continue the application of the cold cloths till the hæmorrhage should cease, and to give the ol. ricini every three hours.

27th. The hæmorrhage ceased at half past

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Case 15.

one in the morning. At three he was left to the care of his nurse. His pulse was then at a hundred and twenty. I saw him at eleven. Pulse a hundred and eight, and weak. Tension of the abdomen less than before the operation, but yet too great. Had had two good stools. Ol. ricini continued. He vomited two or three times in the course of the day, and was restless. Belly more tense in the evening. Tongue furred. Complained much of thirst. Had frequent belchings, and pain in the belly.

28th. I found him much better. He had had very copious evacuations by stool. Vomiting had ceased; the belchings were diminished. Pain in the belly abated, but not removed. Pulse a hundred and two. Countenance much improved. He had taken near five ounces of the ol. ricini; ordered it to be discontinued.

He remained in a very uncertain state during the first fortnight after the operation. His belly tender, and often tumefied, particularly during the second week. His pulse from ninety-six to a hundred and eight. He had no return of the vomiting. He was always relieved, whenever the unpleasant symptoms became aggravated, by purging him with the ol. ricini, though he was never costive.

At

At the end of the second week his tongue became clean, his urine of a natural colour, his abdomen more soft and easy, and his pulse varied from eighty-six to ninety-six. His wound had all this time looked well, being soon filled with good granulations. He was now permitted to sit up a little every day, but was allowed nothing more solid for food than boiled pudding. His belly continued tender, and sometimes painful, for several weeks; but he recovered perfectly at last; and, after his dismission, followed his former laborious employment.

REMARKS.

This Case clearly shews, that large wounds of the omentum are attended with danger, if the bleeding vessels are not tied. As the termination was favourable, I am not sorry that the operation was performed as Mr. POTT and Monsieur CAQUÈ have advised; but I shall never again cut off any large portion of omentum, without applying a ligature to every bleeding vessel, whether artery or vein, before I permit the remainder of the omentum to retire into the abdomen*.

I do

* Since these observations were written, Mr. (now Sir EVERARD) HOME has published some Cases of Strangulated

I do not attribute the dangerous symptoms, which continued for a fortnight, to the excision of omentum; but rather to the diseased state of the intestine. Had the operation been deferred to the succeeding day, or even for a few hours, it is highly probable, that the prolapsed part of the intestine would have separated from that above the stricture. Indeed, our hopes of the poor man's recovery were at a very low ebb, when we perceived the impression which the stricture had made upon the intestine.

It has been proposed to make the incision in the mortified part of the omentum as near as possible to the sound. But I cannot avoid thinking, that those who speak of such an operation as always practicable, speak under the influence of theory, rather than from experience. Sometimes the sound and mortified parts are so intermixed, (as in Case 10.) that it is impossible to leave the former and remove the latter. At other times the gradation of appearance, from sound to mortified, is so

gulated Hernia. In one patient, upon dividing omentum with a pair of scissars, "Two arteries "cut edge bled so violently as to require being s "by ligatures."—Transactions of a Society for t provement of Medical and Chirurgical Kno vol. ii. p. 102.

that one cannot determine where the line of separation will lie. CHAP. V.

The last method of treating a gangrened portion of omentum, is by leaving it in the wound, after reducing what appears clearly to be sound, if there be any such prolapsed. This method has answered well in three cases, inwhich I have tried it; and seems to be peculiarly adapted to those cases, in which the omentum has lain for some time in the hernial sac previously to the strangulation. In two of the cases, the diseased part was cast off on the seventh day after the operation; and in the third case, on the eleventh. All the patients recovered.

After all, I confess, that my apprehensions of danger from cutting off a large portion of the omentum, which perhaps had never a very firm foundation, are greatly diminished; provided every bleeding vessel be secured, and the remaining part be gently reduced, if it does not spontaneously retire. The reader will find two Cases related in this Chapter (12. and 17.) in which the omentum was found collected together like a rope, and not covering the anterior surface of the intestines.

In

CHAP. V.

In the latter case, it had drawn the stomach out of its natural position, and compressed the transverse arch of the colon. The reduction of the omentum, though the excision of a large part were necessary to effect it, must in such cases be beneficial.

The remaining part of the operation consists in the treatment of the wound, after the reduction of the prolapsed parts. The method which was perhaps universally followed till of late, was that of introducing a dossil of lint, tied with a thread, into the aperture made by dilating the abdominal ring. This was done with the view of giving vent to any matter, whether blood, serum, or pus, which might require to be discharged from the abdomen. This method I formerly followed, and am not aware that it has ever prevented the recovery of a patient. However, I see no objection to the method of uniting the lips of the wound by the interrupted suture, and therefore now constantly make use of it. It will not prevent the drawing away of a ligature put upon any bleeding vessel of the omentum; nor intirely prevent a discharge from the abdomen, which may come on soon after the operation. Sir JAMES EARLE recommends the including a part of the hernial sac in the ligature, which is

used

used to bring on the adhesive process in the wounded parts. I can say nothing against this method from experience, except that I have twice seen the vas deferens lying on the anterior part of the sac, which would be in danger of being included in a ligature that took hold of the sac. I may add also, that it is not necessary to include the hernial sac in the ligature, in order to produce a speedy union of the wounded parts.

Unless an evacuation from the bowels comes on soon after the operation, which seldom happens, I direct a laxative clyster to be injected, and give a dose of ol. ricini, or some other mild purgative. These means are repeated every three or four hours, till stools are procured.

If the vomiting, which preceded the operation, returns; I order ten or twenty grains of carbonate of magnesia, with a teaspoonful or two of lemon juice after each dose; to be given every hour or two, till the vomiting ceases.

If the patient is not relieved by these means, but pain of the abdomen comes on, the vomiting and costiveness still continuing; I take blood from the arm, apply leeches, and afterwards, if necessary, a blister to the abdomen; persisting in the use of mild laxatives given in small

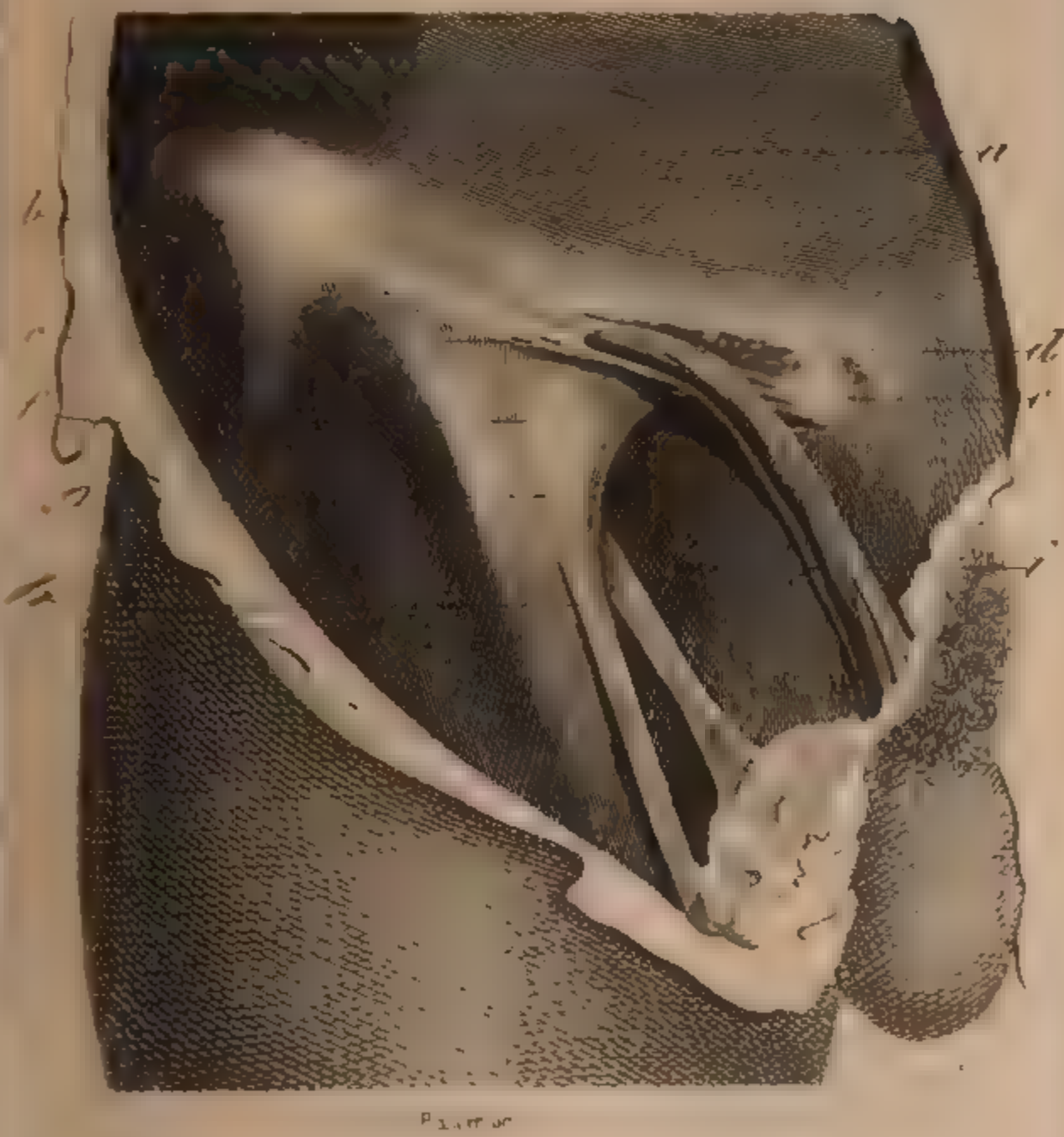
PLATE 4.

EXHIBITS, in a reduced form, an external view of the parts concerned in inguinal and femoral hernia; as they usually appear, after a removal of the common integuments and superficial inguinal glands.

The parts which form the stricture in femoral hernia are here concealed behind Poupart's ligament.

a Aponeurosis of the external oblique muscle.
b Spine of the Os Ilium.
c Inferior or external abdominal ring.
d Spermatic chord.
e Poupart's ligament attached to the tubercle of the Os Pubis.
f Fascia lata covering the sheath of the great femoral vessels.
g Falciform process of the fascia lata, passing obliquely upwards behind Poupart's ligament, to join the posterior projection of the aponeurosis of the external oblique muscle discovered by GIMBERNAT. See 5. and 6.
h Vena saphæna entering the femoral sheath by two branches.
i Pectineus muscle, covered by its fascia.

PL. 4.



PLATE

5.

PLATE 5.

EXHIBITS an external view of the parts which form the stricture in femoral hernia; brought downwards by the pressure of a large lymphatic gland, so as to render visible what was concealed in the former Plate.

This View was taken while the subject was placed in an upright position.

Nothing was removed by dissection, except the common integuments, the fascia of the pectineus with the glands lying upon it, a few ligamentous fibres which crossed Poupart's ligament in an unusual manner, and the small branches of the vena saphæna.

a Poupart's ligament.

b Falciform process of the fascia lata, passing upwards and inwards to join the posterior projection of the aponeurosis of the external oblique, called Gimbernat's ligament, which occupies the space betwixt the falciform process and the Pubis.

c Vena saphæna, entering the femoral vein within the sheath of the great vessels.

d Fascia lata.

e Pectineus muscle, deprived of its fascia.

Below the edge of the falciform process at *b*, a lymphatic gland appears projecting through the femoral ring. This is more distinctly seen in Plate 6.

PL. 5.

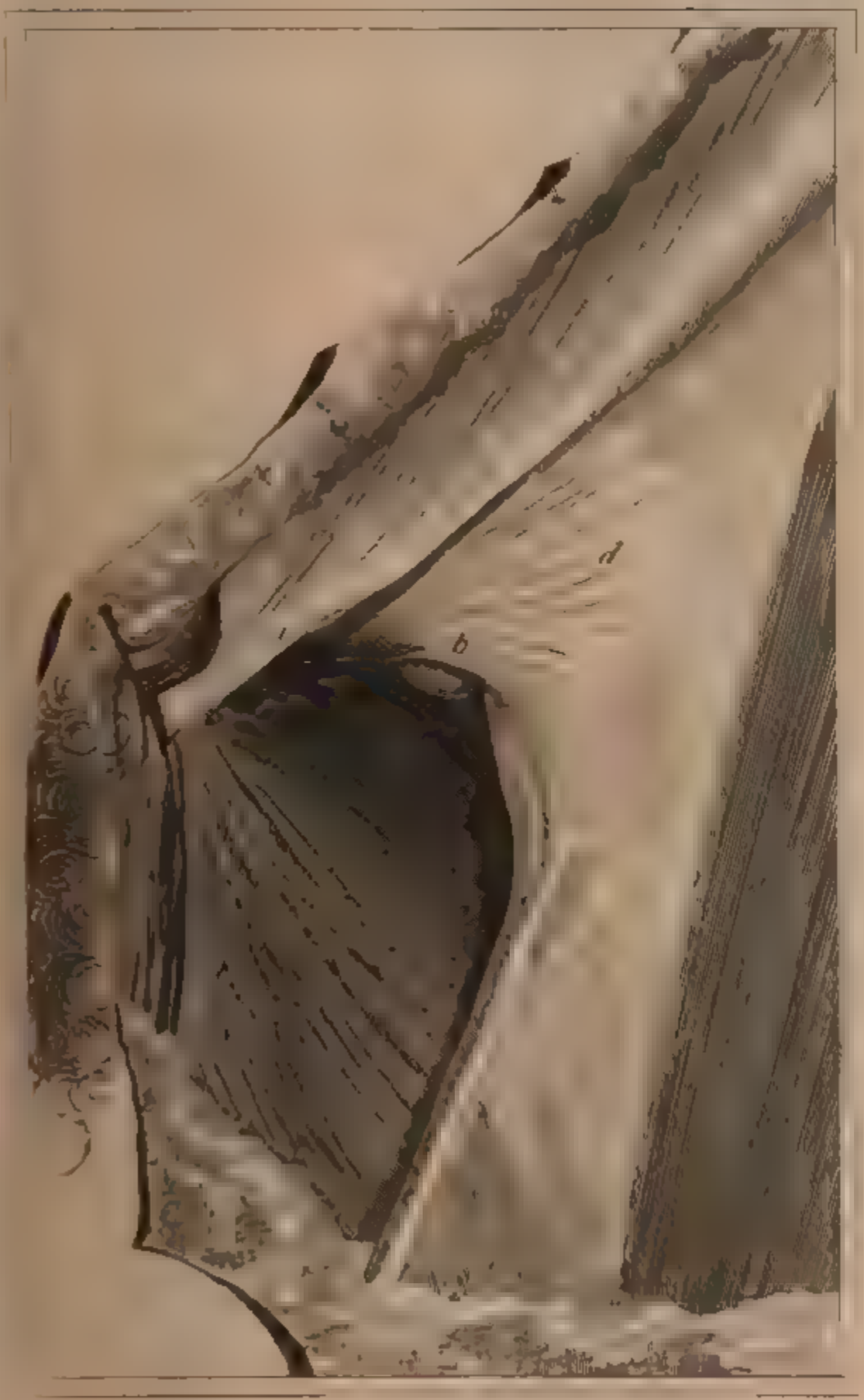


PLATE
6.

PLATE 6.

GIVES a view of the parts exhibited in Plate 5. taken while the subject lay in a supine position.

In this Plate is distinctly seen, the union of the falciform process of the fascia lata with Gimbernat's ligament. Also the manner in which they, together with the sheath of the great vessels, form a ring; through which the femoral hernia descends, and by which it is compressed in the strangulated state.

When the hernia has passed through this ring, it lies upon the fascia of the pectineus muscle.

PLATE

7.

PLATE 7.

EXHIBITS an internal view of the parts concerned in the inguinal and femoral hernia.

a Rectus muscle of the abdomen.

b Transversalis.

c Posterior projection of the aponeurosis of the external oblique muscle, discovered by Gimbernat.

d Os Pubis.

e Spermatic vessels and vas deferens, passing through the upper or internal abdominal ring; which is covered above by the edges of the transversalis and internal oblique muscles, and on its inner side by the epigastric artery and vein.

f Spermatic vessels.

g Vas deferens.

h Epigastric artery, arising from the inner side of the external iliac.

i Obturator artery, which in this subject ran near to, and parallel with, Poupart's ligament, before it descended across the Pubis; but was removed before the Drawing was taken, as it concealed a part of Gimbernat's ligament.

k External iliac artery.

l External iliac vein.

m Circumflex artery and vein.

n Iliacus muscle.

o Psoas muscle.

p Urinary bladder.

The space betwixt the external iliac vein and Gimbernat's ligament, is the place at which the femoral hernia descends.

If a femoral hernia had subsisted in this subject, the obturator artery would have surrounded the neck of the hernial sac; yet at such a distance from the femoral ring, as to admit a sufficient division of the latter, without endangering the artery.

PL. 7.

PLATE 8.

PLATE 8.

Gives an internal view of a femoral hernia, a
manner in which it is embraced on its inner s
Gimbernat's ligament. The posterior part of the l
is pressed against the fascia of the pectineus m
The anterior part of the ligament, which joins the
form process of the fascia lata, can only be seen i
in this Plate.

In consequence of the ascent of the superior b
of the Os Pubis, as it approaches the Ilium; Gimbe
ligament appears to have a greater degree of obliqu
its position than it really possesses.

PL. 8.

CHAP. V.

Miscellaneous Observations relative to the Strangulated Hernia.

1. I think it is not a bad general rule, that the smaller the hernia, the less hope there is of reducing it by the *taxis*. Long continued efforts to reduce a prolapsed intestine are most likely to succeed in old and large herniæ, when no adhesions have taken place.

2. As a strangulation of one side of an intestine is not a common disease, I shall relate an instance of the complaint. The Case may afford some instruction to the young practitioner.

CASE 16.

Case 16. A labouring Man, aged 50 years, subject to a small scrotal hernia, which always retired upon lying down, had the misfortune to strike the scrotum and hypogastrium against a post, as he was walking in the streets in the evening, November 28, 1767. A vomiting immediately supervened, which soon went off; but returned in the morning, and continued all day. I saw him in the evening. There was no appearance of a bruise upon the abdomen or scrotum. The former was somewhat tense; and seemed to be very painful when pressed. There was a very small tumour

CHAP. V.

Case 16.

tumour in the right groin, not exceeding the bulk of a cherry. It was free from tension, though painful when touched. It did not retire upon pressure. The Patient informed me, that the rupture was now less than it used to be, when he was in an erect posture; but had not retired as usual upon lying down. He seemed to be in great pain; for the sweat ran down his face, though his situation was far from being warm. His pulse was about a hundred; but neither full, nor tense. His tongue whitish. His urine was discharged in small quantities.

About sixteen ounces of blood were taken from his arm. The cathartic bitter salt was directed to be taken in small doses, combined with an opiate; and a purging clyster was injected.

30th. The pain in the abdomen had continued severe all night. The vomiting also remained. The abdomen was more swelled, especially in the epigastric region.

At eleven in the forenoon he had a pretty large stool, of proper colour and consistence; but was not relieved by it. Mr. BILLAM, a surgeon in Leeds, visited him along with me soon after this evacuation. The purging clyster was repeated, and after it a mild clyster

was injected. A blister was directed to be applied to the abdomen. Extract. cathartic. ℈ j. thebaic. gr. i ss. were given, and the solution of purging salt repeated. His pulse was small, and at a hundred and twenty. The vomiting continued. At nine in the evening we visited him again. He had had a loose stool, but was not relieved. He had another evacuation in the night; but died about three o'clock in the morning.

I obtained leave to examine the contents of the abdomen; which I did in the evening, in the presence of Mr. LUCAS, surgeon, and others.

I first removed the integuments covering the small tumour. There was a slight protuberance of the peritoneum, appearing just below the abdominal ring, and lying on the inner side of the spermatic chord*. This afterwards was found to be a small hernial sac; but I did not open it till I had examined the contents of the abdomen. The intestines had an inflamed appearance throughout; they adhered

* Had a complete descent taken place in this patient, the hernia would have been of that unusual kind, in which the intestine descends directly from the abdomen, through the external abdominal ring, without passing through the whole of the inguinal canal. In this species, the epigastric artery lies on the outer side of the neck of the hernial sac, and is in danger of being wounded, if the incision is carried outwards to any great extent.

CHAP. V. Case 16.

adhered in many places to the peritoneum, and universally to each other. They were covered by a thick inflammatory exudation, which in some parts appeared to be one-eighth of an inch in thickness. A large quantity of purulent matter was diffused in the abdomen. A small portion of the ileon, not more than half the breadth of the intestine, was contained in the small hernial sac; and adhered so strongly to it, that a hole was made in the intestine by drawing it gently out of the sac. The omentum had an inflamed appearance. A portion of the ileon adhered to the bladder, which also appeared inflamed.

This poor man died about fifty-six hours after he had received the blow. Whether the operation for the strangulated hernia, if performed at an early period of the disease, would have afforded any probability of recovery, I shall leave to the judgment of others. It is of use to know that one side of an intestine may be strangulated, and become gangrened in the hernial sac without any external tension. That in such a case, a patient may have discharges of even solid excrement. That when a strangulation subsists, the danger is not diminished in proportion to the smallness of the hernia. That a hernia may retire in part,

part, and the remainder suffer a fatal strangulation. And lastly, that a full and tense state of the pulse is not a constant concomitant of a highly inflamed state of the intestines. Case 16.

I have related the above Case from my notes; but would not propose the treatment as a model to the young practitioner. In inflammatory affections of the intestines, opiates ought not, in my present opinion, to be given early in the disease, with the view of abating the pain. The effect of purgatives is restrained by them. But it is from the full effect of purgatives that any permanent relief can be obtained. I have taken no notice of the warm bath, though it was directed, as the want of accommodations prevented it from being used in a way likely to be serviceable.

3. The importance of operating in an early stage of the disease cannot be urged too forcibly. A mortification will sometimes come on before the disease has been of long continuance, or the symptoms have become remarkably urgent. An instructive instance of this is related by Mr. WILMER*.

The delay also gives rise to *adhesions*, which may frustrate the effect of an operation.

* Observations on Herniæ, p. 73.

CHAP. V.

CASE 17.

Case 17. In December 1763, I performed the operation for the femoral hernia on a middle-aged Woman, the sixth day of the strangulation, which was the first of my visiting her. The intestine and omentum were both prolapsed, and adhered so strongly to the peritoneum, that they could not be reduced, though a large aperture was made through the femoral ring. The intestine burst about twenty-four hours after the operation. She died on the ninth day after the operation.

Upon examining the contents of the abdomen after death, I found the whole intestinal canal, except the colon, strongly marked with signs of preceding inflammation. The ileon, part of which had been prolapsed, adhered to the peritoneum in many places, to the bladder, and to the appendicula vermiformis. Where it adhered to the last, it was completely gangrened about the breadth of a shilling. Upon separating the parts which adhered to each other near Poupart's ligament, a good deal of well-conditioned pus issued out, though I had never perceived any to flow from the abdomen during the life of the Patient. The omentum was collected togethe-

like a rope, and passed down from the stomach and colon along the root of the mesentery, the small intestines lying before it. This situation of the omentum had drawn the lower orifice of the stomach almost into a vertical position. The transverse arch of the colon was so much compressed by the omentum, running across it, that the solid fæces were obstructed in their passage. The omentum was retained firmly in this situation, by the adhesions which it had formed with the peritoneum near the femoral ring. The bladder was discoloured where the intestines adhered to it. CHAP. V. Case 17.

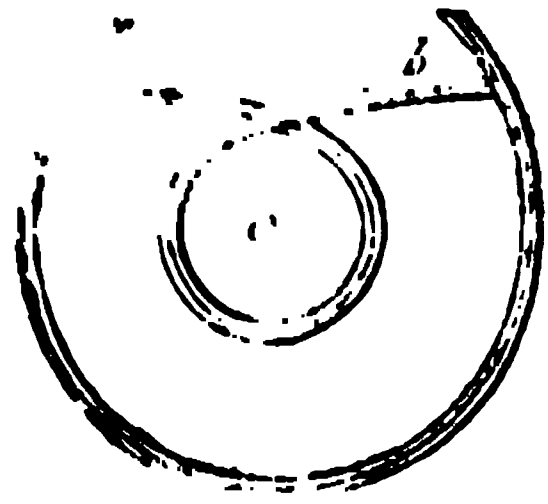
4. There are cases upon record of the intestines suffering a fatal stricture, by some natural part fixed improperly*; and by præternatural cords, formed in a manner which we cannot explain†. The following curious instance of the latter kind, occurred in a patient who came under the care of Mr. LUCAS, at the General Infirmary.

CASE 18.

August 1786. An old Man was brought into the Infirmary, with a pretty large scrotal hernia, Case 18.

* Physical Essays of Edin. vol. ii. Art. 28.
† Memoires de l'Academie de Chirurgie, tom. iii.

[illegible] in a state of strangulation [illegible] state it had been about twenty-four [illegible] The [illegible] was very painful when [illegible] [illegible] the effect of a decoction [illegible] given by way of clyster, and cold [illegible] [illegible] performed the operation [illegible] portion of intestine was prolapsed [illegible] [illegible] so near a state of mortification [illegible] was of a livid hue, and had a cadaverous smell. The cause of this speedy transition [illegible] sound to a highly diseased state [illegible] [illegible] which the intestine suffered from a [illegible] natural membranous cord, like a piece of [illegible] cord, which adhered, by its extremities [illegible] opposite sides of the hernial sac; and [illegible] pletely surrounded the intestine. The [illegible] ing sketch will give some idea of the [illegible] this circumvolution.



The outer curved line represents a transverse section of the hernial sac, when divided at its anterior part: *a b* are the extremities of the membranous cord: *c* the annular aper-

tu

ture through which the intestine passed, and in which it was strangulated. The intestine was of its natural colour above the stricture formed by this circumvoluted cord; below, it was in the state above described. CHAP. V. Case 18.

The Patient began to have a natural discharge of fæces about four hours after the operation, and had many stools; but died on the second day *.

5. When a double hernia presents itself to an operator, the case becomes very perplexing. Instances of this kind ought, therefore, to be recorded, to put the young practitioner upon his guard. Mr. WILMER has given a remarkable instance †. I have twice seen the existence of this disease, and will give a short account of both cases, as they differed considerably from each other in some circumstances.

CASE 19.

September 16th, 1795. While I was operating upon MOSES BRADFORD, whose Case I have already related, JOHN BARRETT, aged 40 years, was brought into the Infirmary with a stran- Case 19.

* Although I have not mentioned it expressly, yet I wish it to be understood, that I always divide the neck of the hernial sac, when I remove the stricture.

† Practical Observations on Herniæ, p. 105.

CHAP. V.

Case 19.

a strangulated scrotal hernia. He had been subject to a hernia for some years; and the strangulation had now subsisted four days. There was much tension in the tumour, though no external inflammation. He vomited frequently, had some hiccough, with a fulness and tension of the abdomen. We strongly recommended an immediate operation, but the man refused his consent. A clyster made with decoction of tobacco was injected; and cloths dipped in cold water were frequently applied to the tumour, after sprinkling upon it some crude sal-ammoniac in powder. Pulse eighty-six.

17th, at nine A. M. The poor man, finding himself worse, consented to the operation, which was immediately performed. His abdomen was more enlarged. His pulse a hundred and twenty.

Upon opening the hernial sac, nothing appeared but omentum; the surface of which was smooth, and the texture apparently sound. It adhered universally to the upper part of the sac; and I could find no aperture of the abdominal ring This state of the parts was perplexing. I now attempted to draw the omentum out of the hernial sac, that I might have the opportunity of examining more

accurately the state of the parts. I was prevented from removing the omentum completely, by an adhesion which it had contracted with the bottom of the sac. I was able, however, to elevate the greater part of it; and this elevation enabled me to discover a fold of the intestinum ileon lying behind the omentum, and surrounded by it. The posterior surface of the omentum was smooth and shining, forming the anterior part of an interior hernial sac for the intestine; the posterior part being formed by the true hernial sac, which also included the omentum *. Upon tracing this interior sac, I was led to the aperture through which the intestine had descended. This aperture was so large that I could easily introduce my fore-finger into it. The coats of the intestine were thickened, but had not much of an inflammatory appearance. The interior sac was complete at its upper part; and was there quite distinct from the sac which I had first opened, and in which lay the omentum. The interior sac contained intestine only. The omentum

CHAP. V. Case 19.

* In this case, the hernial sac was in reality divided longitudinally into two cavities by means of the omentum. From the anterior cavity, there was no opening into the abdomen. The posterior cavity opened into the abdomen, as usual.

CHAP. V. Case 19.

omentum seemed to have no communication with the abdomen. I divided longitudinally the omentum, and the interior hernial sac, which was either formed by, or adhered intimately to, the omentum. I then enlarged the aperture of the abdominal ring, and reduced the intestine, though with some difficulty, on account of the increased thickness of its coats. I cut off the omentum from every part of the exterior sac.

If the interior sac, in this case, was formed by the omentum, the disease must have subsisted in this state for a considerable time; for the sac appeared to be as regularly formed at its upper part as if no omentum had been prolapsed: and when I introduced my finger into the abdomen through the ring, I had the same sensation as in a simple enterocele. If the interior sac was not originally formed by the omentum, it is difficult to account for the appearance of the parts at the bottom of the exterior sac.

This Patient recovered extremely well for the first ten days; and was then seized with the locked jaw, of which he died at the end of the second day of the seizure.

I examined the contents of the abdomen after death, but observed nothing which could

could account for this fatal termination: Every thing relative to the hernia seemed to indicate the approach of a perfect cure. CHAP. V.

CASE 20.

In January 1796, I was desired to visit Mrs. BROOKE, of Harewood, whom I had some years ago cured of a strangulated femoral hernia by the operation, and who now laboured under the same disease on the opposite side. The strangulation had subsisted three days. She vomited frequently, and had had no stool; yet the abdomen was soft, her pulse calm, and her tongue clean. Case 20.

I immediately performed the operation. There was nothing in the hernial sac but omentum, except a large quantity of serous fluid. The omentum was in part gangrened, and adhered to the sac. I could find no aperture into the abdomen. My Patient seemed convinced, that the intestine had been down before I began to perform the operation; and from the accurate description which she gave me of the different states of her disease, I saw no reason to doubt the truth of her conjecture. She assured me, that during the operation, she had the sensation which she was accustomed to feel, whenever the intestine

retired

[redacted]

[redacted]

[redacted]

hernia congenita. It may seem a contradiction in terms to say, that I have known a hernia congenita first formed when the patient was sixteen years of age. But my reader, who understands the nature of this disorder, will know, that the term describes a distinct species of hernia, rather than the time of its formation*.

CASE 21.

Case 21. In the year 1765, I was desired by Mr. BILLAM to visit along with him a young man, aged sixteen years, labouring under a strangulated scrotal hernia. The right testis had, a short time before the attack of this disease, descended into the scrotum. The descent of the testis was succeeded by a hernia, which soon became strangulated. After bleeding, he took fifty drops of laudanum, divided into three doses. The pain, which he felt in the tumour, abated. He fell into a sound sleep, which continued three or four hours; and upon his awaking, it was found that the hernia had retired. A truss was applied, to prevent a relapse.

The

* See an accurate description of this disease, in Dr. HUNTER's Medical Commentaries, Part 1st.

CHAP. V. Case 31.

The following year, while the truss was removed, for the purpose of repairing it, the hernia returned; and immediately became strangulated. Various means were used to procure a reduction, but without effect. On the fourth day of the strangulation, I performed the operation at the request of Mr. BILLAM, and in the presence of him and Mr. WYNNE. Both omentum and intestine lay within the tunica vaginalis testis, which in this case constituted the hernial sac. They were both of a dark colour, but not in a state of mortification; except a small part of the extremity of the omentum, of which there was some doubt. The omentum adhered slightly both to the intestine and hernial sac: but they were easily separated. After the division of the abdominal ring, the intestine was reduced without hesitation; but some difference of opinion, or considerable doubt at least, arose, respecting the reduction of the omentum. The omentum was at length reduced without any retrenchment, after the opinion of the majority of the surgeons present.

[illegible] of inflammatory affection suc- [illegible] the operation. The Patient was [illegible] relieved [illegible]

relieved by bleeding and purging; but died at the expiration of a week after the operation. The wound had a good aspect during the whole of this subsequent illness. CHAP. V. Case 21.

I obtained leave to examine the contents of the abdomen, after death. That part of the omentum which had been prolapsed, was now completely mortified; and lay just above the ring, which was healed internally, so that no aperture remained in the peritoneum. The remainder of the omentum adhered in several places to the intestines. The small intestines, in general, did not appear much inflamed; but that portion which had been strangulated was in a gangrenous state. The colon on the right side appeared much inflamed, and in many places of a dark colour. The diseased portions of intestine adhered to the contiguous parts. A small production of omentum was attached to the spermatic chord, or rather to the peritoneum covering it, about an inch above the left testicle. By this attachment, the testicle had been prevented from descending into the scrotum.

7. An *Epiplocele* is a troublesome disease, considered simply, and also, as it frequently gives rise to an intestinal hernia. If it is reducible,

the tumour must be treated as a common abscess. See Case 11. CHAP. V.

A truss should always be worn after the reduction of the omentum.

8. It sometimes happens, after the cure of a strangulated hernia, that the rupture does not return; but the general result is otherwise.

Judging from my own experience, I should say, that a larger quantity of intestine usually descends, in those persons whose lives have been preserved by the operation; but that the intestine in such persons is less liable to strangulation. A well adapted truss should always be applied as soon as the wound is cicatrized, and will bear the pressure.

9. An artificial anus at the groin, succeeding a wound or mortification of a strangulated intestine, is usually a very disagreeable consequence; yet sometimes admits of such relief, as to render the situation of the patient not uncomfortable.

CASE 22.

Within the year 1809, two Women were admitted into the General Infirmary at Leeds, whose fæces were in part discharged at the groin, from improper management of a strangulated Case 22.

[illegible] In one of them, the [illegible] under the idea of its [illegible] In the other, who came [illegible] had been suffered [illegible] she was a middle-aged [illegible] the hernia seven years [illegible]

After [illegible] a discharge of fæces from the [illegible] and six months, she was admitted a Patient of the Infirmary. A small portion of intestine then projected from the wound, and fæces, in a liquid state, were constantly discharged. I confined her to bed about [illegible] months; during which time a clyster was [illegible] consisting of a pint of water-gruel with a [illegible] of treacle.

I [illegible] the intestine, brought the surrounding [illegible] and applied a [illegible] compress upon the part, secured by a [illegible] bandage. Upon the compress was placed a two-ounce avoirdupois weight, which was afterwards exchanged for one of four ounces. She was put upon a mild and soft diet of milk, broth, pudding, and the like. The bandage was renewed every day.

By this treatment the wound became contracted; the natural evacuations by the anus were regular; and the discharge of offensive

matter

matter ceased. I then removed the bandage, and applied a well adapted truss, placing its cushion upon a compress of linen: after a trial of about three weeks, she was discharged. Case 22.

From an inquiry afterwards made of this Patient, I learnt that, although the aperture was not completely healed, it was reduced to a very small compass, and discharged only a little yellow fluid, without any offensive smell, unless she permits herself to become costive: in that case a minute quantity of fæcal matter (not exceeding a few grains in weight) is discharged. She now executes the ordinary business of her family with ease and comfort.

CASE 23.

Case 23.

The Patient alluded to in the last Case, whose hernia, when strangulated, and in a state of external inflammation, had been opened as an abscess, came under the care of Mr. CHORLEY, fourteen weeks after the strangulation. There was then an extensive ulcer in the groin, and upper part of the thigh, from which the fæces were constantly discharged. Mr. CHORLEY applied a compress with tight bandage, and confined the Patient

CHAP. V.

to bed betwixt two and three months. The wound became completely healed, and has now (1809) continued in that state for ten months.

Case 23.

An Account of an uncommon Species of SCROTAL HERNIA.

CASE 24.

Case 24. November 6th, 1764. I examined the body of a Child fifteen months old, who had died of a *strangulated scrotal hernia*, in the presence of Dr. CROWTHER, a physician who then lived at Leeds.

The intestines were not much inflamed, but had in general their natural appearance. The jejunum and ileon were considerably inflated with air; but the colon was so much contracted, that it looked like a solid cord rather than a hollow intestine. The cæcum, or head of the colon, was not to be seen in the abdomen; for it had descended through the abdominal ring, which formed a stricture upon that part of the intestine where the ileon joins it. In the stricture was also included the root of the appendicula vermiformis; the rest of this appendage being still in the abdomen.

Having

CHAP. V.

Case 24.

Having examined the contents of the abdomen, without altering the state of the hernia, I made a longitudinal division of the scrotum on its right side, continuing my incision the whole length of the tumour, and laid bare, as I imagined, the hernial sac. This I opened towards its inferior part, which was the most prominent; but it proved to be the *tunica vaginalis testis*, containing, together with the testicle, a portion of the true hernial sac.

This unusual appearance engaged me to prosecute the dissection with great care. I found that the tunica vaginalis was continued up to the abdominal ring, and inclosed the hernial sac; adhering to that sac, by a loose cellular substance, from the ring to within half an inch of its inferior extremity. The fibres of the cremaster muscle were evident upon the outside of the exterior sac, or tunica vaginalis. The interior or true hernial sac was a production of the peritoneum as usual, and contained only the cæcum or head of the colon. The strangulated part of the intestine appeared to have been much inflamed, and was in some places become black; it was considerably distended, and was filled with liquid fæces. Having removed the proper

... I examined the posterior part of
... and found it connected with
... in the same manner as
... when the testis has
... mum. An additional
... sac was the *tunica*

... circumstances, it is evident
... both from the com-
... when the hernial sac
... tunica vaginalis: and
... where the pro-
... contact with the
... hernial sac besides
... the hernial sac
... testicle, and sur-
... it is necessary
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... peritoneum; which
... communicating
... by an aper-
... aperture is in-
... birth. The
upper

upper part of the bag then gradually contracts itself, till the communication between that portion of it which includes the superior and greater part of the spermatic chord, and the lower part of the bag, which includes the testicle and a small share of the chord, is obliterated. The lower part of the process or bag retains its membranous appearance, and is called *tunica vaginalis testis propria*; while the upper part covers an irregular cellular substance, without any sensible cavity, diffused amongst the spermatic vessels, and connecting them together.

In the hernia which I am describing, the intestine was protruded after the aperture in the abdomen was closed; and therefore the peritoneum was carried down along with the intestine, and formed the hernial sac*. It is evident also, that the hernia must have been produced while the original tunica vaginalis remained in the form of a bag as high as the abdominal

* Mr. HUNTER supposes (Med. Comment. p. 84.) that a *hernia congenita* may be formed after the aperture of the original tunica vaginalis has been closed; the violence with which the intestine is protruded bursting open the closed aperture of that tunic. But it does not seem to have occurred to him, that a hernia of the kind I am describing might be produced, if the peritoneum should not again be burst open.

thick, circular, quilted part, formed about two inches from one extremity of the belt.

Case 25.

This bandage kept the intestine securely within the abdomen, and was renewed occasionally. The funis was separated about a week after birth; and at the expiration of a fortnight, from that time, the aperture at the navel was so far contracted, that the crying of the child, when the bandage was removed, did not cause the least protrusion. I thought it proper, however, to continue the use of the bandage a while longer. A small substance, like fungous flesh, projected, after the funis had dropped off, about half an inch from the bottom of that depression which the navel forms. A dossil of lint spread with cerat. e lapide calaminari, and assisted by the pressure of the bandage, brought on a complete cicatrization.

I saw the child, for the last time, December 30th. The fungous substance had then disappeared, a firm cicatrix covered the navel, and the child was perfectly well.

CASE 26.

Case 26.

In the year 1775, I was called to see a new-born Child, whose intestines had escaped at the navel out of the cavity of the abdomen.

I found

CHAP. V.

Case 27.

I found it difficult to reduce the prolapsed parts; but by gentle pressure I made them all return into the abdomen in the space of about half an hour. I wrapped some flat tape round the dilated part of the navel-string; and applied a belt, quilted with wool, near one of its extremities, round the belly of the child, that I might keep up an easy compression upon the navel.

The hernia did not return, but the child became uneasy after the reduction; and, although it had two natural stools, yet it died about forty-eight hours after the operation.

WHILE I am upon the subject of Hernia, I think I shall confer a benefit on those who are afflicted with the Exomphalos, or Ventral Hernia, by recommending a Truss invented by Mr. EAGLAND, of Leeds, an ingenious surgical mechanician. I have, during the last four years, applied it both to infants and adults with success; and think it to be superior to any kind of truss hitherto used for those disorders.

CHAP. V.

Description of a New Truss for the

EXOMPHALOS,

OR

VENTRAL HERNIA.

THE TRUSS consists of two springs of cast steel, well tempered and japanned, which render them elastic, and secure from corrosion.

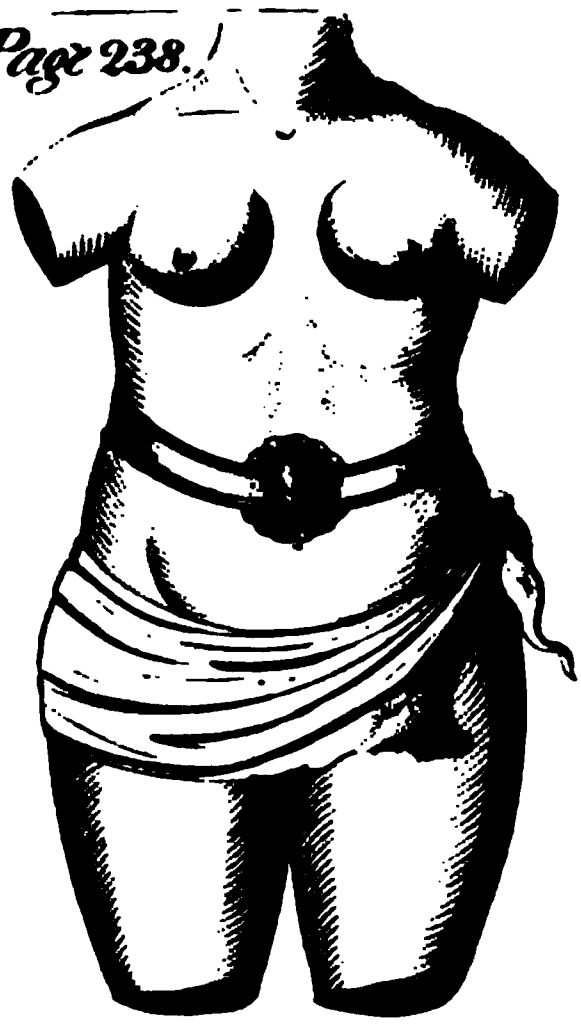
Each spring is formed nearly to the shape of a horse-shoe; and, being covered in the usual manner, is fastened by a distinct brass hinge, placed vertically, to the inner side of a small plate of thin steel, which, for cases of reducible Exomphalos, is covered on the outer side with morocco leather, and on the inner side with one thickness of doe leather, to which is stitched firmly a cushion of blanket, and lining leather, containing a piece of cork of a proper shape and size.

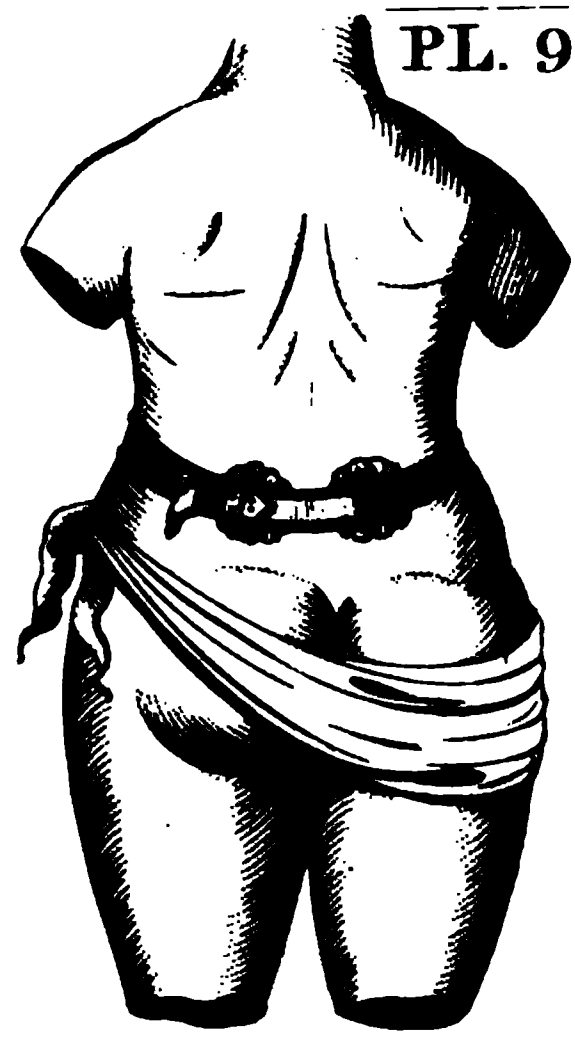
This part, when applied, adapts itself closely to the umbilical region; and by the regular and constant pressure of the springs, prevents the Hernia from protruding, without giving uneasiness to the patient.

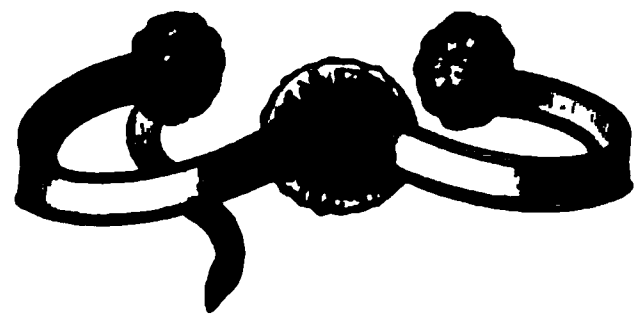
For

CHAP. V.

For herniæ which cannot be reduced, the piece of cork is omitted, and a plate of steel is substituted, sufficiently large and concave to suit the projecting part. By this means the hernia is defended from external injury, and its further protrusion restrained.







A Truss for the Exomphalos.

Invented by

Jas. Eagland, of Leeds.

SURGICAL MECHANICIAN.

CHAP. VI.

On the FUNGUS HÆMATODES.

CASE 1.

JUNE 21st, 1780, WILLIAM CAMPINET, aged 21, a stout young man, by trade a stone mason, was brought into the General Infirmary, on account of a very large tumour on the inside of the right thigh and knee. Upon inquiry he gave the following account of his case.

About two years before that time he perceived a small swelling, the size of the last joint of his thumb, on the inside of the right knee, not far from the *patella*. This tumour was moveable, and gave no impediment to the motion of the joint; it was not discoloured, but was painful when moved or pressed upon. It continued in this state half a year; and then, the man having hurt his knee by falling against a stone, it gradually increased in bulk, but did not exceed the size of an egg. The skin was now discoloured with blue specks,

[illegible] be veins. He could still [illegible] follow his business; but [illegible] upon that knee.

[illegible] his admission into the [illegible] a piece of wood placed [illegible] ground, and violently [illegible] but did not strike [illegible] The tumour began im[illegible] and within a few hours [illegible] thigh, on the inner [illegible] a fortnight after [illegible] burst at the lowest [illegible] discharged some [illegible] fungus, about the [illegible] appeared and re[illegible] A few weeks after the [illegible] the skin burst [illegible] tumour, and [illegible] the fissure [illegible] increased, [illegible] to the size [illegible] measured eight inches [illegible] opposite parts of its base. [illegible] issued from the base of [illegible] when the man hung down [illegible]

The whole tumour was now of an enormous size. It measured nineteen inches across

wh[illegible]er

when the measure was carried over the fungus last described. From its highest part in the thigh, to the lowest part just below the knee, it measured seventeen inches, without including the fungus. The base of the tumour at the knee, exclusive of that part which ran up the thigh, measured twenty-four inches in circumference. The tumour became narrower as it ascended the thigh; and terminated obtusely about the mid-way between the knee and the groin. It did not surround the thigh; but was situated on the inner side of the limb, and was distinctly defined. There was no swelling in the ham, nor within the capsular ligament; but the leg, knee, and thigh, appeared sound where they were not occupied by the tumour. The skin, covering the tumour, was livid in some places, and had several fissures and small ulcerations upon it; but had not burst asunder, except in the two places above described. The tumour was soft, and gave a sensation of some contained fluid, when gently pressed with the hands alternately in opposite directions. CHAP. VI. (Case 1.)

The Patient assured me, that he had walked, without pain in his knee, a week before his admission into the Infirmary: and he seemed persuaded, that he could now walk, if he

CHAP. VI.

Case 1.

durst venture to put himself into an erect posture. He had come twenty-two miles in a post-chaise; and had lost very little blood by his leg being laid upon the cushion. He complained of the greatest uneasiness in the highest part of the tumour. It had become hot and painful in the night time, for some days past. His pulse beat a hundred and fourteen strokes in a minute; and was rather tense, but not full. His tongue was clean. He had no thirst. His appetite had been good till within the last few days. He did not remember to have felt at any time a pulsation in the tumour.

June 22d. I called a consultation of my Colleagues at the Infirmary: the result of which was, that the tumour should be laid open by cutting off a portion of the distended integuments; and that, after removing the contents, if the sac should be found in a sound state, the disease should be treated as a simple wound; but that, if the containing parts should be in a morbid state, the limb should be immediately amputated.

As the Patient had borne so long a journey the preceding day without apparent injury, we did not expect any inconvenience from removing him out of the ward into the operation-

operation-room, which was situated at a small distance, and upon the same floor. However, the man lost so much blood from the removal, that he fainted while we were applying the tourniquet. As soon as he had recovered from his *deliquium*, I made an oval incision through the whole of the tumour longitudinally, and removed a large portion of the morbid integuments.

The tumour contained a very large quantity of a substance not much unlike coagulated blood; but more nearly resembling the medullary part of the brain, in its consistence and oily nature. It was of a variegated reddish colour, in some parts approaching to white; and, as blood issued from every part of it when bruised, I judged it to be uniformly organized. This mass was partly diffused through the circumjacent parts in innumerable pouches, to which it adhered; and was partly contained in a large sac of an aponeurotic texture. There was a great and universal effusion of blood from the internal surface of the sac, and from the pouches containing this morbid mass.

The diseased state of the containing parts, and the connexion of the sac with the capsular ligament of the knee, put an end to our idea

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of saving the limb. Had the appearance been more favourable than it was, yet the violent effusion of blood forbad all hope of success but by amputation. I immediately, therefore, performed the operation; and found all the muscles in a sound state, except those on the inner part of the thigh, which had been in contact with the morbid substance forming the tumour. These, for a considerable depth, were of a brown colour, and softer consistence. The principal artery was in a sound state. I was obliged to take up several small vessels; some of which were near the surface on the inner side of the thigh; and passed through a part so much diseased, that we could not ascertain whether it was muscle or adipose membrane. As the cavity of the sac became very narrow and shallow, at its highest part, I made the circular incision, through the integuments, about two inches below its highest part; conceiving that this small portion of the cavity would soon become a clean sore, and cause no impediment to the cure.

As soon as the Patient was placed in bed, I examined the amputated limb, that I might more clearly see the seat of the tumour, and ascertain the state of the parts about the knee.

That

That portion of the *vastus internus femoris*, which remained in the amputated part of the thigh, was become brown, and much softer than the other muscles; which were in a very sound and robust state. There were many small portions of extravasated blood, lodging in the substance of this muscle. The sac was formed by the fascia of the muscle; and had its inferior termination where the aponeurosis begins to make the outer layer of the capsular ligament of the knee. The two fungous substances, which I have already described, appeared to have been only extensions of the morbid mass, where this had made its way through the sac and the integuments. The joint of the knee and muscles of the leg were perfectly sound.

The poor man was very low after the operation, and complained of great pain in the abdomen. This pain was accompanied with a strong pulsation in the *aorta*, which might readily be felt by laying one's hand upon the abdomen. I gave him immediately tinct. opii g^{tt} xxx.; and directed him to drink for nourishment barley water and thin broth. He was often sick in the course of the afternoon; and vomited up the barley water. The pulse at his wrist was so weak after the

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operation, that it could scarcely be felt. The pain in the abdomen abated in a few hours.

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At four P. M. I ordered the following draught to be given every two or three hours; with wine whey for common drink:

℞. Aq. puræ ℥j.
Sp^{t} piment. ʒij.
Conf. aromatic. ℈j m.

I visited him again in the evening; and, finding the vomiting still to continue, though his sickness was somewhat abated, I ordered *tinct. cardam. comp.* ʒij. diluted with three times its quantity of water, instead of the former draughts.

June 23d. I was called to see him betwixt four and five in the morning. He had an uneasiness in his throat, accompanied with a sense of suffocation, which awaked him frequently when he fell asleep. He was likewise troubled with the hiccough; and threw up every thing that he took. His pulse was too frequent to be counted. His countenance, however, was somewhat improved. The stump was quite easy. I directed him to take occasionally two drops of essential oil of cinnamon, upon a lump of sugar; and ordered, for his common beverage, the best French brandy, diluted with

with three times its quantity of water, in which as much cinnamon had been previously boiled as would make it grateful.

A cataplasm was laid upon the region of the stomach, consisting of *theriac. androm.* ℥j. *aq. ammon.* ʒij.

Nine, A. M. He had not vomited since he began to drink the brandy diluted with decoction of cinnamon. His pulse was at a hundred and forty-two. The hiccough still affected him a little after talking.

Four, P. M. Pulse a hundred and thirty-six. No vomiting. Tongue rather dry. Ordered veal broth for food. He had had no stool since his admission into the Infirmary, yet was in a state of such extreme debility from inanition, that I thought it best to delay the use of laxatives in any form. I did not give him an opiate to-day, as he had no pain in the stump; but as the spasmodic affections of his throat and stomach had been so considerably relieved by the grateful stimulants, which he had taken, I directed them to be continued.

24th. Pulse a hundred and thirty-two, and somewhat fuller. Tongue dry. He had not got much sleep in the night, yet he seemed better. Diet continued.

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25th. Pulse the same. The nurse shewed me a broad livid spot on his back, just above the *nates*, which was evidently an incipient mortification. I ordered that cloths wet with *liquor ammon. acet.* should be kept constantly applied to the part affected. The decoction of bark, made warm with the spirituous tincture, was directed to be given in the dose of three spoonfuls every two hours.

26th. Pulse a hundred and sixteen. The progress of the mortification was stopped.

27th. Pulse a hundred and twelve. He began to have an appetite for food; and was allowed to take pudding and broth. The wound had a glossy appearance. A good deal of *pus* was discharged from the interstices of the muscles.

28th. Pulse a hundred and ten. His tongue was more moist and clean. A little flesh meat was allowed for his dinner.

His countenance was improved. The uppermost part of the longitudinal wound (which had been the extremity of the sac) was healed to the extent of an inch: the rest of it remained sloughy, and was dressed with a digestive ointment.

From this time the granulations of flesh upon the stump became good; the progress of

healing was favourable, and the cicatrization was nearly completed, at the expiration of the sixth week after the operation; when a new source of trouble engaged my attention.

That small and superficial part of the great sac, which I had left at its superior extremity, from an unwillingness to amputate more of the thigh than appeared necessary to be removed, was now healed: but there had gradually risen at the lower and inner part of the thigh, beneath the cicatrix, a tumour which was now about four inches in length, and between two and three inches in breadth. This contained a soft substance, exactly similar, as far as the touch could discover, to that which had filled the large sac. This tumour was painful; and now discharged, sometimes a bloody serum, and sometimes dark coloured blood, through four or five small orifices or fissures in the cicatrix.

Not yet fully aware of the obstinate nature of this disease, I hoped to produce good granulations from the internal surface of this tumour, and to cure my Patient, by exposing that surface to the air. I thought it right, at any rate, to make trial of this method; being extremely unwilling to proceed, without absolute necessity, to a second amputation.

August

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August 3d. I made a longitudinal incision through the whole extent of the tumour; and removed the substance which it contained. This substance was exactly similar to that which occupied the large tumour, and which I have already described. Some fresh blood was found in this as well as in the large tumour. When I had intirely removed the contents of the tumour, the cells, in which the morbid substance had lodged, bled freely; although no distinct blood-vessel was visible. The blood resembled that of the veins in colour; and flowed more copiously when the upper part of the thigh was compressed, than when it lay still without pressure. The wound was filled with lint, and covered with a pledget of cerate.

No advantage, however, was obtained by laying open the tumour. The interior surface was found to be in too morbid a state to produce sound granulations. Blood continued to ooze out of the wound for a few days. The interior surface then became covered with a blackish substance, which gradually extended itself, and formed a new fungus. A variety of escharotics were applied, with the view of destroying the fungus and the morbid surface of the wound. But in vain. The

The growth of the fungus always exceeded the quantity destroyed. Undiluted oil of vitriol, applied liberally, had very little effect.

I was now reduced to the necessity, either of removing the whole morbid part by excision; or of performing a second amputation. The diseased part was perceptibly circumscribed, as well as superficial; and therefore, upon a consultation with my Colleagues, it was determined to attempt the removal of the diseased part without amputation.

26th. No sooner was the thigh raised from the bed, for the purpose of applying a tourniquet, than a copious hæmorrhage took place. The tourniquet was applied with all possible expedition; and I began to remove the fungous substance: but every attempt to do this increased the hæmorrhage, so that we were compelled to apply a second tourniquet. The greatest compression which we could make, was not sufficient to put an entire stop to the bleeding.

Upon examining the wound carefully, when the contained substance was removed, we found the muscular flesh degenerated into a hard mass, which felt somewhat like cartilage. The adipose membrane was also diseased, and was formed into large cells or pouches, in which

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articulately. He was very faint; but deliquium, as at the former amputa- He complained of great pain at his I gave him *tinct. opii* g^{tts} 40, in a draught; but he swallowed it with fficulty.

e evening his pulse was tremulous, ld not be distinctly counted. He had l, in a great measure, the use of his n; but he still faltered in speaking. at his navel was much abated. He frequently; but had no hiccough, nor in breathing. I directed him to decoction of bark, with the addition of the tincture of bark; and to drink then of the decoction of cinnamon ch brandy.

Eight A. M. I found him very low. ted brandy, which had been so nd beneficial to him before, was now unpleasant; so that the smell of it tchings. I ordered him to drink a whenever he chose, as that was the which he had now the greatest is pulse could not be counted; the in speaking continued, and his ce was very languid.

M. Pulse a hundred and forty-five.

The

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The vomiting had ceased, and all the other symptoms of extreme debility were abated.

The ligatures were cast off before the expiration of a fortnight after the operation. The wound looked glossy, but continued to contract in its dimension as fast as could be expected. He had had at times, since the last amputation, a little difficulty in breathing, attended with pain in the thorax; but now he began to complain of a troublesome cough, which disturbed him chiefly in the night-time. The weather was very hot, and he perspired profusely at nights. A diarrhæa came on, but was soon checked by giving him a decoction of logwood along with that of the bark. The *Elix. vitriol. acid.* abated his profuse perspiration. His cough became less troublesome, and he breathed better. He was allowed to sit up in his chair as much as he could bear without fatigue. He was usually cheerful. He was allowed a little flesh meat at dinner, three or four times a week; and three half pints of ale in the course of the day. His breakfast and supper consisted of milk porridge, or hasty pudding made with oatmeal and water. As soon as he was able to be removed, he was sent home into the country. I was afterwards informed, that his cough never left him,

and that he died consumptive about half a year after he had left the Infirmary.

REMARKS.

In this Case, the large mass, constituting the tumour, appears to have been originally formed by an extravasated fluid, which in a short time became organized. It is not to be supposed, that a tumour coming on immediately after a violent sprain, and, in the course of a few hours, extending itself from the knee half way up the thigh, could be formed in any other way than by the rupture of some vessels, pouring out their fluid contents into the cellular substance of the thigh. But of what nature was this fluid? We know that pure blood will remain extravasated for a long time unchanged. The substance found in this patient's thigh had not the appearance of pure coagulated blood. It was indeed chiefly, but not uniformly, of a red colour; and when handled it felt rather like the medulla of the brain, than coagulated blood, being of a consistence somewhat unctuous. Was it blood mixed with a large proportion of lymph? The texture of the substance might lead to this supposition, which receives strength from the consideration,

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consideration, that the tumour was situated in that part of the thigh where the largest lymphatic vessels are found.

An ingenious Friend of mine has suggested, that the aponeurotic expansion covering the small tumour on the knee, was lacerated by the fall, which set the fungus confined beneath it at liberty; and that from the violence done to this substance, proceeded the effusion, which occasioned the soft tumour in the thigh, so suddenly formed after the accident.

Whatever the fluid was originally, it appeared with sufficient clearness to have become organized; for the contents of the tumour bled freely wherever they were broken by the hand.

The growth of this fungus was not prevented by the strong aponeurosis which covers the muscles of the thigh; for that covering was first distended, and then ruptured in two places by the fungus.

Where the fungus was exposed to the air, its colour was much darker; and it appeared there more like coagulated blood than in its interior part, the colour of which was somewhat variegated.

All the parts which lay contiguous to the fungus had a morbid appearance. The

muscular

muscular fibres were become brown, and indistinct. The adipose membrane formed a variety of distinct pouches, filled with the fungus, the surfaces of which bled freely when the fungus was removed. The fascia had lost its natural gloss, and had acquired a brownish hue.

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It deserves to be noticed, that at the second amputation, the hæmorrhage from the morbid fungus could not be restrained, by the application of two tourniquets to the thigh; yet, after the amputation of the stump, there was no difficulty in restraining the hæmorrhage from the vessels of the thigh, by the usual pressure of one tourniquet. As the fungus was situated at the extremity of the stump, it was highly improbable, I might say impossible, that the hæmorrhage should have continued from the veins, in the degree in which it did continue, without some supply from the arterial system.

It appears from this instance, which is not a solitary one, that the pressure of the tourniquet upon the thigh in amputation, (and the pressure in this case was much greater than usual) does not completely obstruct the passage of blood in the arteries: it only diminishes so much the force of the current, as to enable the vessels, when in a sound state,

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to exert their natural contractile power, so effectually as to prevent hæmorrhage.

Remarks on Case 1.

The contractile power of a sound artery is great. It is very common to see an artery bleed copiously when imperfectly divided, yet to cease bleeding immediately, or in a very short time, after a complete division. It would seem that this natural contractility of the capillary vessels, constituting the fungus, was greatly diminished; as a hæmorrhage from them could not be restrained by any degree of pressure, which we could make upon the superior part of the limb*.

As

* I do not recollect to have met with an observation of this curious circumstance in any author whom I have consulted. Yet I have seen the same occurrence more than once.

A woman was admitted into the General Infirmary, on account of a tumour near the ancle, which had arisen from a blow given by the foot of a person who was insane. When the tumour was opened, the contents had the appearance of coagulated blood. Upon attempting the removal of any part of the contained substance, a considerable hæmorrhage ensued, which could not be suppressed by the application of two tourniquets. In consideration of the morbid state of the parts, it was judged necessary to amputate the leg. After amputation, the divided vessels shewed no greater tendency to hæmorrhage than in ordinary cases of amputation.

This case occurred before I was acquainted with the nature of the disease, to which I have given the name of *Fungus Hæmatodes*. Upon recollecting the circumstances of

As this is a disease which has not hitherto been described by any author, with whose writings I am acquainted*, I have taken the liberty of calling it *Fungus Hæmatodes*, a name as expressive of its character as any I could devise.

In my remarks on this Case, I have ventured out of the path of *practical observation*, and have wandered into that of *theory*. The facts are stated faithfully; but I am not anxious about the theoretical reasoning, which forced itself upon my mind, in a review of this curious Case. If any of my readers can give a more satisfactory explanation of the phænomena, I am content.

Pulmonary consumption is sometimes the consequence of violent hæmorrhage, when the patient is greatly reduced by the evacuation; especially if the hæmorrhage has been repeatedly renewed. I have seen this happen so often in patients who had no apparent tendency to consumption, that I cannot doubt of the fact, though I can see no relation between the cause and effect.

of the case, I am inclined to think, that the tumour in this woman's leg was of the same kind as that which I have just described.

* This observation is only applicable to the periods, when this Case, and almost all the other Cases contained in this Chapter, were first written.

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CASE 2.

Case 2. July 20th, 1785, I visited Mrs. DEAN, of Linton, a maiden lady, aged 54 years; who had a considerable enlargement of the left *mamma*. She informed me, that, about three months before, as she was exerting herself in raising her father (who was superannuated, and confined to his bed), she felt a sensation as if something had cracked in her breast. Within a few days after this accident, she perceived a small tumour in the part, about the size of a hazel-nut. This tumour increased gradually in bulk; was hard and moveable. When it had arrived at the size of an apple, it was shewn to the late Dr. MOORHOUSE, at Skipton; who considered it as an occult cancer, and advised extirpation. Afterwards Mr. PRIESTLEY, a surgeon at Leeds (who accompanied me in this visit), being in the neighbourhood of Linton, was consulted. He, entertaining hopes of removing the disease by internal remedies, did not recommend an operation; but advised Mrs. DEAN to take the *Cicuta*.

The tumour had increased very much within the last six weeks before my first seeing it; and, when I first saw it, extended nearly to the

the axilla on one side, and almost to the sternum on the other. Its surface was uneven. The integuments were in general thick; but not universally so. In some parts they felt rather thin; and upon pressing those parts, it seemed as if the tumour contained a fluid. When I pressed the thick and harder parts of the tumour, I had the sensation of something crackling beneath my fingers; as if, by the pressure, I had broken some fibrous substance. Shooting pains had been felt at times in the tumour from its commencement: they were now more frequent; and Mrs. D. passed the nights uneasily. She was languid, and her appetite was bad.

I was apprehensive that the tumour had arisen from the rupture of some blood vessels; and that it would prove an untractable disease. I thought it too late to attempt extirpation: and, imagining that the integuments would soon give way, and that a considerable hæmorrhage might supervene upon the bursting of the tumour, I informed my Patient that I could not be of any service to her at the distance of thirty miles; and that it would be necessary for her to come to Leeds, if she wished for my assistance.

About a week after this visit, Mrs. D.

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Case 2.

came to Leeds, and put herself under the care of Mr. PRIESTLEY and myself. Within ten days after her arrival she was seized with the dysentery, which was then epidemic in the town. The assistance of Dr. DAVISON, a physician in Leeds, was requested, in the treatment of the dysentery. During the continuance of this disease, the skin covering the tumour, gave way; a dark-coloured substance arose in the fissure; and blood began to ooze out from the aperture, at the base of this substance.

The more I reflected on the origin, progress, and appearance, of the tumour, the more inclined I was to believe that the disease was exactly similar to that which had affected the thigh of poor CAMPINET. I related this man's Case to Dr. DAVISON, and Mr. PRIESTLEY; and expressed my opinion, that Mrs. DEAN's tumour would be found to be of the same nature. As the situation of this tumour precluded the advantage of applying a tourniquet, I expected that the hæmorrhage would prove fatal, whenever a large opening should be made. However, I did not choose to withhold my assistance, how little soever that assistance might avail; and consulted the gentlemen, who attended with me, upon the method

method to be pursued, whenever the degree of hæmorrhage should render it necessary to make some further attempt to preserve the life of our Patient. CHAP. VI. Case 2.

August 19th, Mrs. DEAN was nearly, but not entirely, free from her dysenteric complaints, when the aperture in the tumour became so large as to discharge a considerable quantity of blood. The orifice was now filled with a loose plug of blood. When this was pushed inwards, a great deal of extravasated blood, of a dark colour, rushed out; partly fluid, and partly coagulated.

I cut off a large oval portion of the diseased integuments; with the design, both of preventing the hæmorrhage which they would have caused, and of enabling me to apply the more readily, to the remaining part of the cavity, such styptics as we had determined to make use of.

The fungus substance, which principally constituted this tumour, had the same appearance as that which I have described in CAMPINET's case; and evidently bled upon being broken. It adhered strongly to the remaining part of the integuments, which formed a greater number of irregular cells. Indeed, the whole internal surface of the sac containing

CHAP. [illegible] Case [illegible]

the fungus was composed of these cells; except the bottom, formed by the pectoral muscle, where the surface was more even. When the whole of the contained fungus was removed from the bottom of the sac, a portion of the pectoral muscle, about two inches square, was left uncovered. The muscle was in a morbid state; and appeared as if it had been exposed to the air, and had begun to form granulations on its surface. The muscular fibres were scarcely distinguishable. The whole internal surface of the sac bled uniformly, as if the blood had been squeezed from a sponge. To the muscular part I applied Ruspini's styptic; and to the remainder of the cavity hot oil of turpentine. The cavity was gently filled with lint, dipped in these liquids; and the applications were retained in their place by a circular bandage, put round the thorax.

Notwithstanding our Patient was kept in bed, in a horizontal position, during the operation, which I endeavoured to perform with all possible expedition; yet she fell into a deliquium before the dressings could be applied. She was, however, soon recruited, and spoke to us cheerfully. We did not remove her in the least from her position; but

but made her as clean and comfortable as we could. We directed that she should be supplied frequently with wine gruel, and other cordial nutriment of the most grateful kind. CHAP. VI. Case 2.

At two o'clock in the night her pulse ceased to be distinguishable; and at eleven in the morning of the next day she expired.

I did not observe any unusual appearance of blood upon the bandages; but Mrs. F. at whose house she lodged, afterwards informed me, that (upon laying out the body) a good deal of blood was discovered to have issued from the cavity of the tumour.

CASE 3.

In 1787, Mrs. APPLEYARD, a middle-aged woman, consulted me on account of a tumour in her breast, which she apprehended to be of a cancerous nature. It occupied the whole *mamma*, was about the size of a small melon, and was quite moveable. It had not the appearance which cancerous tumours usually have when they affect the whole breast. There was no puckering of the skin, nor shrinking of the nipple; but the integuments of the breast had an uniform smooth appearance. It had not, when examined by the touch, Case 3.

CHAP. VI. Case 3.

touch, the uneven hardness of an occult cancer; neither had it the equal softness of a tumour containing a fluid in a single cyst. Its surface was even; but, upon pressure, I could feel that the contents of the tumour were not of equal density.

I assured my Patient that her disorder was not cancerous; but advised the extirpation of the tumour, as it was highly improbable, that any internal remedies could check the growth of it. However, that I might not seem inattentive to her complaints, and at her earnest request, I ordered some medicines for her. A little time verified my prognostic; and in the course of two months after she first consulted me, the tumour was so much increased in bulk, that she consented to the operation which I had proposed.

The operation was, however, delayed for a week, on account of a sickness and frequent retching, which came on immediately after she had resolved to submit to this unpleasant, though often necessary, method of cure. The uneasiness of mind which she felt from the apprehension of an operation, seemed to be the sole cause of these recent complaints. They were relieved by the use of aromatic and volatile medicines.

Dec. 13th.

Dec. 15th. With the assistance of Mr. LOGAN, I extirpated the tumour, which weighed four pounds and three ounces avoirdupois. It was perfectly distinct from the surrounding adipose membrane; having no other connection with it than by that cellular membrane, which universally connects the contiguous parts of the body. When divided by the knife, it had the appearance of a diseased glandular substance, intermixed with small cavities containing a gelatinous, or viscid serous, fluid. As the common integuments, which surrounded this morbid mass, appeared to be in a sound state, I placed them in contact with the subjacent parts, applying plasters and bandage so as to bring about a healing by the first intention.

My Patient went on extremely well, for a time, and every circumstance flattered me with the hope of a speedy and happy termination. At the end of the third week, when I was about to take my leave of her, a serous discharge began to take place from the lowest part of the wound, which was nearly, though not completely, cicatrized. After this had continued some days, I perceived a small elevation of the cicatrix a little above the part whence the serous fluid issued. The

tumefaction

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Case 3.

tumefaction increased gradually, till the cicatrix was burst open. A substance like dark-coloured coagulated blood appeared in the fissure. I was at first inclined to think, that some part of the integuments might have remained at a small distance from the subjacent parts, with which I had endeavoured to unite them; and that the small vessels, pouring out blood, might have caused the tumefaction which I have mentioned. I introduced my finger at the fissure; and, finding a cavity extending an inch or two, underneath the cicatrix, I divided the integuments at the cicatrix, and removed the coagulated blood; as it appeared to be. There was, however, a new formation of this substance: on which account I sprinkled the internal surface of the recent wound with finely powdered red precipitate; that I might produce good granulations, and firm healing. My attempts were in vain. Instead of an union of the parts, I observed a daily growth of the substance, resembling coagulated blood, and an extended tumefaction under the adjoining integuments, which had been firmly united. There was now likewise a daily, though not a considerable, hæmorrhage from the cavity of the wound.

These

These circumstances produced in me a painful conviction of the nature of this new disease; and I could not doubt that it was similar to the complaint which I have described in the two last Cases. My Patient at the same time became much indisposed, and was affected with frequent sickness and retching, as she had been before the excision of her breast. I informed her friends of the dangerous situation in which she now was, and requested a consultation. Mr. LUCAS and Mr. LOGAN, surgeons to the General Infirmary at Leeds, were called in; who concurred with me in thinking that it was necessary to remove the diseased parts, as the only means which could save the life of our Patient; though the success of the operation was very doubtful.

Feb. 7, 1788. With the assistance of these gentlemen I performed the operation; making a large circular wound, and removing every part which had a morbid appearance. The fungus had sunk into several cells, which were formed in the adipose membrane; and bled wherever I took hold of it.

For a few days she seemed to be as well as we could expect. But a cough and difficulty of breathing came on before the symptomatic

fever

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fever had ceased: and she died on the seventh day after this second operation; without any bad appearance in the wound, except such as extreme languor induces.

Case 3.

CASE 4.

Case 4.

Jan. 21st, 1789, Mrs. STORR, of York, consulted me at Leeds, on account of a tumour in the left *mamma*. She was forty-five years of age, and had ceased to menstruate for a year and half. She informed me, that about three months before, she had perceived a tumour nearly of the size of a small apple. It had increased considerably in bulk; especially since the application of a plaster, which appeared to be the *emplast. litharg. cum gummi*. She felt a constant dull pain in the diseased part; but in no great degree. The skin appeared rather red where the tumour was most prominent. The tumour was moveable, and felt hard in some parts; in others it gave the sensation of a contained fluid. It was situated on the exterior side of the *mamma*. I recommended extirpation as the only probable method of cure; and the next day, at her request, I performed the operation.

The tumour adhered in part to the *mamma*, and had the appearance, when divided, of a diseased

diseased glandular substance, interspersed with three or four cysts, containing a viscid serous fluid. The upper part of the wound, which was made in the adipose membrane only, I united by two stitches of the interrupted suture. The lower part, in which a portion of the *mamma* had been divided, was united only by the help of sticking-plaster. The upper part of the wound healed by the first intention; but the lower part was not completely healed till the expiration of eight weeks.

One circumstance, which attended the healing of this wound, may deserve to be mentioned; as it afforded some indication of that morbid state of the parts, which soon after produced a fatal disease. During the healing of the lower part of the wound, my Patient complained of much soreness and pain in the cicatrices of the upper part, particularly those made by the punctures of the needles. These were so very tender, that for a time she could scarcely bear them to be touched. One of them burst open, and formed a small sore, which did not heal until I had filled it with levigated red præcipitate. This tenderness did not come on immediately after the healing of the upper part of the

CHAP. VI. Case 4.

wound, but after the interval of two or three weeks. It was not attended with any morbid appearance in the lower part of the wound.

About six weeks after the complete cicatrization of the wound, Mrs. S. began to feel a constant uneasiness in the part, and perceived it to be tumefied. The tumefaction and uneasiness increasing, she came again to Leeds, to put herself under my care.

The tumefaction then extended about an inch and a half on each side of the cicatrix. When it was examined by pressure, there was a sensation of a deep seated fluid, covered by thick integuments. The skin, in its most prominent parts, had a blue appearance.

I suspected that the disease, which I have described in the three preceding Cases, had taken place: and I desired a consultation. Mr. LUCAS visited the Patient with me; and as we could propose no probable means of cure but a second operation, with his assistance I extirpated the tumid parts, which contained a substance similar to that described in the preceding Cases. No part of the integuments was left that had the least morbid appearance; and the disease seemed to be completely removed.

The

The wound was soon filled with good granulations, and the cure proceeded in the most favourable manner for about three weeks. A small portion of the wound at its upper part then began to look sloughy, and formed a cavity extending about an inch under the adjoining integuments. I filled this part with *Hydrar. nitrat. ruber*; but a substance like dark-coloured coagulum of blood arose in it; the growth of which was not repressed by the escharotic. I thought it best to remove this morbid part; and, having divided the integuments about an inch and a half, I dissected out all that appeared to be diseased.

The appearance of the sore continued favourable for some time after the removal of this morbid part; and the progress of healing was as speedy as is usual in sores of such extent. But, before the cicatrization was completed, the parts which had been healed, and the contiguous integuments, began to grow tumid, and to shew too clearly, that the morbid fungus, which had made a second operation necessary, was forming again.

My hopes of a cure were now entirely destroyed. As every part, which had the least appearance of disease, had been twice

removed. I saw no probability that any further surgical assistance could save the life of my Patient. She returned home in the beginning of August, and died at the end of five weeks after she left Leeds.

CASE 3.

A boy about 14 years old, was admitted a patient of the General Infirmary, on account of a very deep-seated tumour in the calf of the leg. The cause of this disorder he appeared to have been a sprain, from a sudden and violent exertion. For some time after this accident he perceived the calf of the disordered leg to be rather thicker than the other. The tumour continued to increase during six months, and it was now rendered very painful

It was impossible to ascertain, with precision, the situation or nature of this tumour. It was clearly situated betwixt the gastrocnemius muscle, and the bones of the leg, and might have its origin near the latter; but the attempt to extirpate it by incision, was out of the question. There was no pulsation in the tumour; nor any discoloration of the integuments. The accident which had caused the appearance of this tumour rather

indicated,

indicated, that it had arisen from the rupture of some vessels in the leg. CHAP. VI.

Upon a consultation, no probable method of cure was suggested but that of amputation; and, the parents of the boy giving their consent, I performed the operation above the knee. Case 5.

After the operation I dissected the leg, and found the tumour to consist of a substance similar to that which I have described in the preceding Cases, situated between the gastrocnemius and solæus muscles, and extending a little before their edge on the outer side of the leg. Wherever this substance lay in contact with the muscular fibres, they were of a brown colour, and had lost their usual distinct appearance. We could perceive no ruptured vessel; but the lymphatics were not injected.

The Patient had a good recovery.

CASE 6.

In April 1793, I visited Mr. THOMAS WARD, of Saxton, near Tadcaster, aged 33 years, who had a large tumour near the ancle of one leg, the circumference of which, including the leg, measured twenty-one inches. The account which he gave me of the Case 6.

CHAP. VI.

origin and progress of this tumour, was as follows:

Case 6.

Four years ago, last winter, soon after he had walked out in the morning, he felt some pain in his heel; and from that time he could not, without pain, put the heel to the ground in walking. Some months after this attack, he perceived, just below the ancle, a small tumour, about the size of a horse-bean, which was moveable, but not painful. This tumour continued to increase in bulk gradually, and was for some time unattended with pain. After sowing some corn in the spring following the first appearance of this tumour, in which exercise he imagined he had hurt himself, the tumour began to increase more rapidly; and was then attended with pain, and an increasing weakness of the leg.

In May 1792, the tumour and weakness had so far increased, that he was but just able to walk about, with the assistance of a walking stick. At this time he put himself under the care of a person, who applied blistering plaster to the tumour, and rubbed it somewhat severely with tow, when the cuticle was removed. Under this treatment, the size of the tumour, and the weakness of the ancle, were so much increased, that he

was

was in a few days unable to walk without crutches. CHAP. VI.

About a week before I saw this Patient, the tumour had been punctured with a lancet by an old woman, under whose care he had placed himself. A dark-coloured fungus, resembling coagulated blood, had arisen from the wound, and was in breadth nearly equal to that of a half crown. Case 6.

The sensation which the tumour afforded, when examined by gentle pressure, compared with its contents, which were become evident by the wound made in it, left no doubt in my mind respecting the nature of the disease, and the remedy which alone could effect a cure.

The mind of my Patient revolted at first at the idea of amputation; but in the course of a few days, he became fully sensible of the necessity of this operation, which I performed the following week; but not before he was much reduced by the loss of blood from the fungus.

I was obliged to take up fifteen arteries, after amputating the leg, a little below the calf. The fungus, when divided, appeared variegated like a nutmeg, some parts appearing red, like blood, while others were almost white.

CHAP. VI.

It felt greasy when handled. The Patient recovered well, and regained his perfect health.

CASE 7.

Case 7.

In November 1796, Mr. WRIGHT, of Horsforth, consulted me on account of a large tumour, situated in the neck of his Son, who was about nine years of age; and gave me the following account of the disease:

In April preceding, the little boy happened to fall against the post of a gate. The stroke affected chiefly the lower jaw on one side, and loosened four of the grinders, but made no wound. The bruise appeared to be inconsiderable, and was not expected to produce any unpleasant consequences. Towards the end of the month, the part which had been struck, began to swell gently; and the swelling had a gradual, though slow, increase. In August, the swelling had grown to the size of a small hen's egg. In this state, a poultice was applied to the part affected, which seemed to increase the growth of the tumour, and to render the skin somewhat red.

When I was consulted in November, the tumour was about nine inches in length, and six or seven in breadth. It extended from the lower jaw to the clavicle. From the appearance,

pearance, and the sensation felt on examining the tumour by gentle pressure, I judged this to be a case of the *Fungus Hæmatodes*. I informed the boy's parents of the incurable nature of the disease, and prognosticated the speedy approach of the fatal event, which took place about ten days after I had seen this Patient. The boy's father afterwards informed me, that the tumour seemed to produce suffocation by its pressure upon the windpipe.

CHAP. VI. Case 7.

CASE 8.

RICHARD FINNEY, the driver of a stage waggon, consulted me in January 1797, on account of a tumour in the back part of his neck, which had been formed in that part about two years, in consequence of a hurt which he had received. I punctured the tumour with a lancet, that I might discover what was the nature of its contents, and found nothing in it but coagulated blood. I brought the lips of the puncture into contact by plaster, that I might produce an adhesion, and immediate healing of the wound; intending to lay open the tumour at a more convenient opportunity. I desired the man to rest from labour till the puncture should

Case 8.

CHAP. VI. Case 8.

be healed. He neglected this advice, and set off soon after with his waggon. He was much exposed to the cold air, the weather being then severe; and an inflammation of the tumour soon supervened. The fever which attended this inflammation confined him upon the road for a time; but he was brought back to Leeds about a fortnight after I had punctured the part. The inflammation still continued: but with proper care subsided, and the contents of the tumour were in part discharged. That I might produce a complete evacuation of the contents without making any large wound in the neck, which now seemed unnecessary, I introduced a seton string, and made it pass through the tumour near its base. By this treatment the tumour seemed to be completely emptied; and gradually disappeared. I then withdrew the string, and the punctures healed.

In the course of a few weeks a small tumour arose in the same part, which was evidently owing to the dilatation of the original sac by some fluid. Upon puncturing the sac, a fluid of a gladry kind, without colour, issued out. Having reaped so much benefit from the use of the seton before, I made another through the cyst in the same manner, hoping

hoping to bring about an adhesion of the sides of the cyst. My expectation, however, proved abortive. Instead of a gradual contraction of the cyst, as after the former operation, the tumour in a short time began to increase; and a discharge of blood took place from some fissures in the distended integuments. Case 8.

May 27th. I opened the tumour in its whole extent, and removed a fungus, which was now formed in it, excepting a part which adhered so strongly to the muscles of the neck, that I could not clearly distinguish it from the muscular fibres. The hæmorrhage was profuse, and on this account also I was compelled to desist before I had removed the whole of the fungus. The man was so soon recruited after this operation, that, on the 6th of June, he was able to come to my surgery to be dressed. After repeated sprinkling with Hydrar. nitrat. rub. the wound put on a favourable aspect. Healthy granulations arose from the surface, and the ulcer became much contracted in its size. I entertained now great hopes of a complete cure; but after some weeks, the morbid fungus began to form itself at the edges of the sore. The integuments were divided where the fungus had elevated

them

[illegible] the adjacent muscles, and the [illegible] was sprinkled with escharotics [illegible]. The fungus was reproduced [illegible] could destroy it, and the poor [illegible] became languid under the increase of this [illegible] disease. In November he was admitted a Patient of the General Infirmary, [illegible] once more dissected out the fungus, now became considerably larger. The hemorrhage was great; but he recovered, and the surface of the wound once more, for some time, put on a favourable appearance. My hopes were again disappointed, and the fungus became larger than ever. Almost every kind of escharotic was tried, but in vain. I could not repress the growth of the fungus by the undiluted vitriolic acid, by the Hydrargyrus muriatus, Antimonium muriatum, nor any other application that was used. In the spring 1798, the man left the Infirmary; a cough supervened, and he died the 10th of June following, exhausted by a hectic fever, and a copious discharge of fetid matter from the fungus, which was then considerably increased in size.

CASE 9.

Case 9.

August 20th, 1801, JAMES RICHARDSON, a stout man, aged fifty years, consulted me on account of a large tumour on the posterior part of his left shoulder. Upon a careful examination I could not doubt of its being a tumour of that intractable species, to which I have given the name of *Fungus Hæmatodes.*

As the knowledge of this disease in its incipient state may be of importance, I will give a description of this Case; which I apprehend will not be found inapplicable to the general appearance of the disease, when it arises spontaneously, without any previous operation, upon a part not endued with great sensibility.

The tumour was not painful. It had arisen to a considerable size before the Patient was aware of its existence; and it was first pointed out to him by his friends, who observed, that the posterior part of one shoulder was become larger than the other.

It did not interrupt the motion of the muscles upon which it was situated; the Patient being able, as he informed me, to follow his laborious employment of a blacksmith as well as usual.

Its

CHAP. I. Its situation seemed to be between the integuments and external muscles, a little below the joint of the shoulder, covering a great part of the scapula.

Its form and size may be understood by the following measurement, which I took with a marked tape: From the base on one side, to that on the opposite side, where the breadth was the greatest, carrying the measure over the summit of the tumour, it measured 19 inches. The measure taken across the tumour, in the same way, at its smallest breadth, was 8 inches. Its base measured 23 inches.

When examined by gentle pressure in various ways, it seemed to be of an uneven density. In some parts an alternate pressure gave the sensation of a deep seated fluid. When grasped by the fingers in other parts, one might perceive an irregular hardness. This examination gave no pain.

It was moveable, but in a slight degree: not so much as a wen formed by an enlargement of the adipose membrane.

The cutaneous veins, which ran over its surface, were enlarged.

Some idea of its growth may be obtained from

from the following particulars. It was first examined in July 1800, and it was then judged to be about half the size at which I found it. The Patient had been lately at Harrowgate, and had used a hot bath there, which he apprehended had much increased the size of the tumour.

The integuments did not seem to be rendered thinner by the distention of the fungus, which I conceived to be lodged beneath and within them.

The skin had been irritated by some stimulating applications which had been made to it. I directed the application of the Cerat. lap. calam. to remove this superficial inflammation; and advised the poor man to do nothing else, as I conceived the disease to be incurable.

I shewed this Case to Mr. LOGAN, my colleague at the General Infirmary; who concurred with me in opinion, respecting the nature of the complaint, and the impropriety of extirpation.

I saw this Patient again in February 1802, and was informed by him, that he had been under the care of some irregular practitioners, supposed to be skilful in the cure of cancers. The tumour was much enlarged, and beginning

to

CHAP. VI.

to ulcerate. His countenance was fallen, and his strength seemed to be declining.

Case 9.

From this time he made no further application to me, as I thought proper to inform him, that I conceived his disease to be incurable; but he applied again to the same irregular practitioners, who had flattered him with large promises.

The following account was received from the Wife of this poor man after his death:

The tumour continued to increase in bulk; and, in October, about eight months after I last saw him, the fungus burst through the skin. From this time its growth was rapid; and at last it became equal in size to the head of an adult person. It began to bleed frequently about a month before his death, which happened on the 28th of December, a little more than two months after the fungus had burst through the skin.

The first attack of hæmorrhage took place as he was sitting by the fire with his wife. They heard the sound of some fluid dropping upon the floor, before they were aware that any blood had issued from the fungus. At this time, in the judgment of his wife, he lost not less than a quart of blood; afterwards

blood

blood used to flow from the fungus, as if it had been squeezed from a sponge. CHAP. VI.

The woman had heard her husband say, that he did not remember to have received any blow upon that part of his shoulder which was occupied by the tumour; nor was he conscious of any other circumstance, which could have given rise to the disease. Case 9.

CASE 10.

ANN WOOD, aged 30 years, was admitted an in-patient of the General Infirmary, in February 1802, under the care of Mr. LOGAN, on account of a large tumour at the extremity of the fore-arm near the wrist; and gave the following account of her case: Case 10.

About ten months before her admission, she began to feel pain in the wrist of her arm, attended with great weakness, but no sensible tumefaction of the part. About two months after this attack, she perceived a small tumour, near the end of the radius, about the size of a marble, which gradually increased in bulk. About five months before her admission, a seton had been put through the tumour by a surgeon whom she then consulted. After this, the tumour grew more rapidly; and by degrees an excoriation took place in some

parts

CHAP. VI.

Case 10.

parts of the tumour, which were more prominent than the rest. Three months before her admission, a hæmorrhage took place from one of these excoriated parts; at which time she lost about eight ounces of blood. The tumour had bled repeatedly since that time, but never to so great a quantity at once.

Mr. LOGAN called a consultation of the Surgeons of the Infirmary, at which it was determined to amputate the arm below the elbow, as the parts above the tumour appeared to be in a sound state. The tumour was not measured, but it was about the size of a moderate melon.

When divided after amputation, the contents were of an ash-colour, though somewhat variegated. To the touch they felt greasy, like the brain. A part of the radius, at its inferior extremity, about two inches in length, was wanting. The ulna was whole, and remained covered with its periosteum, though the tumour lay in contact with it.

The integuments were kept in contact by means of the interrupted suture, and the wound was completely healed on the 13th day after amputation.

When I consider, that this disease had subsisted

subsisted two months, causing pain and weakness in the arm, before any tumefaction was perceived by the Patient; that the tumefaction was of small extent at its first appearance; that the periosteum and bone had been destroyed by the disease in that part where it had commenced; and that neither the bone nor the periosteum of the ulna appeared to be injured by it, though the fungus lay evidently in contact with the latter; I am inclined to think, that the disease, in this case, originated in the bone, or at least within the periosteum. It deserves to be considered, whether in a similar case, it would not be the best practice to open the tumour at its first appearance. This seems to be the only method of preventing the dreadful ravages, which we see this disease is capable of making, when left to itself. But I am far from being sanguine, that even this method, together with the removal of what might appear morbid within the tumour when opened, would effectually prevent the growth of this obstinate fungus.

Case 10.

I have seen several cases of this disease, of which I have given no account in this Chapter; and have not been able to effect a cure in any instance, but by amputation of

CHAP. VI.

the limb, when the seat of the disease was in the extremities*. A few years ago, I amputated the arm of a middle aged man below the elbow, who had a tumour exactly similar to that last described; but the state of the bone was not examined, nor did I examine it in the case of Mr. WARD (Case 6.) having seen no affection of the bone from the disease at that time.

If I do not mistake, this disease not unfrequently affects the globe of the eye; causing an enlargement of it, with the destruction of its internal organization. If the eye is not extirpated, the sclerotis bursts at the last; a bloody sanious matter is discharged, and the Patient sinks under the complaint.

When the disease occupies merely the adipose or cellular membrane, lying upon the surface of the muscles, the tumour is not usually painful in its beginning; nor does it impede the motion of the muscles on which it is seated. But when deeply seated in the limbs, it causes pain and weakness of the part affected. Mrs. DEAN found considerable pain

* August 30th, 1809, I extirpated the eye of an adult, affected, as I apprehend, with the Fungus Hæmatodes. The disease had not returned Jan. 30th, 1810; and I have heard nothing of the Patient since that time. [1814.]

pain from the growth of the tumour in the mamma. CHAP. VI.

The fungus, as it increases in bulk, does not render the integuments uniformly thin, as in the case of an abscess. In one part, the tumour, when pressed with the hands, will afford the sensation of a deep seated fluid; while in another part it feels hard and uneven. In Mrs. DEAN's case, there was a sensation as if some fibres were broken, when the tumour was handled with pressure.

In an advanced stage of the disease, the integuments, and fascia of the muscles (if the fungus is situated beneath this part) are burst open; and the fungus which rises through the aperture sometimes appears black, like a mass of coagulated blood. At other times the appearance more resembles an excoriation. Under both these circumstances hæmorrhages ensue.

In this process, the integuments do not become uniformly thin, and of a red colour, as when purulent matter is making its way; but they continue to feel thick as usual round the fungus that has burst through them.

This fungus is an organized mass, and bleeds wherever it is broken.

When the parts containing the fungus are

CHAP. VI.

divided, they are found to be in a morbid state. The adipose membrane forms a great number of pouches, filled with the fungus; upon the removal of which the pouches bleed copiously, from every part of their internal surface.

Wherever the fungus comes into contact with the muscles, they lose their natural redness, and become brown. They also lose their fibrous appearance; and cannot in every part be distinguished from the adipose membrane, though a distinction is in general evident.

The growth of this fungus cannot always be repressed by the strongest escharotics. Neither the hydrargyrus nitratus ruber, the hydrar. muriatus, the antimon. muriatum, nor the undiluted vitriolic acid, have been sufficient for this purpose.

The annexed Plate was engraved from a reduced copy of a Drawing, which Mr. LOGAN had procured to be taken from one of his Patients in the Leeds Infirmary, afflicted with the *Fungus hæmatodes* upon his arm. The circumference of the tumour, including the arm, measured thirty-three inches. The situation of the tumour rendered amputation impracticable, and the disease of consequence proved fatal.

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PL.10.

CHAP. VII.

On Dislocations.

Though the reduction of dislocated bones is not ranked amongst the most difficult operations of surgery; yet cases sometimes occur, in which an experienced Surgeon may find reduction to be an arduous task, or may even be foiled in the attempt. A few Observations on this branch of surgical practice, may not, therefore, be unacceptable to the young practitioner.

The *dislocation of the os humeri* at the shoulder, is the most frequent species of dislocation, which calls for the aid of the surgeon.

Before the reduction is attempted, that part of the arm to which the extending power is to be applied, should be well defended with some soft substance, otherwise the patient feels much unnecessary pain in the operation. Soft leather, quilted with wool, forms a convenient defence; but I generally make use of a long flannel roller, as being the most readily

CHAP. VII.

obtained, with which I cover the lower part of the arm, and upper part of the fore-arm.

When Mr. LUCAS was Surgeon to the General Infirmary at Leeds, he recommended the following convenient apparatus, for the purpose of extension.

Take a piece of linen or calico, about three yards in length, and half a yard in breadth; fold this longitudinally till it is reduced to about three inches in breadth; then place its middle part in an elliptical form, as in Plate 12. fig. 2. and put the elliptical part round the limb, till the parts *h i* come nearly into contact with each other. Then put the tail *f* through the noose at *i*, and the tail *g* through the opposite end of the noose at *h*; by which means the elliptical part must be drawn tight round the limb, and the tails of this bandage must be used as the means of extension.

Mr. CHARLES BELL recommends that kind of double noose, which is called the sailor's knot*. This gives a very firm hold; but the description of it is difficult.

If the head of the os humeri remains in the axilla, and not far removed from the glenoid cavity, the reduction may sometimes be executed

* Operative Surgery, vol. ii. p. 241.

cuted with a very small degree of extension, as in the following Cases. CHAP. VII.

CASE 1.

In the summer 1772, a corpulent Woman fell from a chair, on which she was standing for the purpose of hanging up some linen to dry, and dislocated her shoulder. After I had put every thing in proper order for the reduction, I desired the assistants, who were to make the extension, to keep the arm elevated at a right-angle with the body, till I should direct them to begin the extension. In doing this, they kept the arm a little upon the stretch, waiting for my orders. While the arm was in this state, I placed my fingers below the head of the bone, that I might be ready to co-operate with them; and pressing my fingers upwards into the axilla, that I might feel the head of the bone distinctly, the reduction was unexpectedly made by this gentle effort. Case 1.

The result of this Case determined me to try, whether reduction might not sometimes be effected with less extension than is commonly used, and consequently with less pain to the patient than is generally experienced.

It appeared to me, upon reflection, that

CHAP. VII.

the muscles, when so far stretched as to be rendered painful, begin to re-act, and to resist the efforts made for their further elongation: I thought it probable, therefore, that a greater degree of extension might be produced before the re-action took place, if the extension were made very slowly; and that the re-action might grow less, or even cease, after it had begun to take place, if the arm were kept in a moderate, but not painful, degree of extension for some time, before any attempt was made to push up the head of the bone into its articular cavity. By acting upon this principle, I have several times reduced a luxated os humeri, with the assistance of very little extension. I cannot say that this method has always succeeded, but it certainly deserves to be tried; and I am inclined to think, that much extension is seldom necessary when the head of the bone remains in the axilla. In all cases, the more slowly the extension is made, the more will the resistance of the muscles be eluded; the probability of success will be increased, and the patient will not suffer any degree of unnecessary pain.

CASE 2.

Case 2. In January 1773, an elderly Man dislocated the os humeri at the shoulder, by falling from a plank

a plank which served as a bridge to a ditch. After I had fastened the towels upon the arm, and given directions to the assistants, I examined the situation of the head of the bone in the axilla, before I gave them orders to begin the extension. They put the arm, however, a little upon the stretch in holding it by the towels; and the gentle pressure which I made, in feeling for the head of the bone, produced the reduction. CHAP. VII. Case 2.

I once saw a luxated shoulder reduced by the mere efforts of the patient.

CASE 3.

May, 1774, I was called to an elderly Man, who had dislocated his shoulder by falling as he was walking. He was very uneasy while I was making the necessary preparations, after I had ascertained the existence of the disease. He walked about the room, putting his arm into various positions, to procure a little ease. With this view he placed his hand upon the back of a low chair, and moving his body in different directions, he suddenly cried out, as if hurt more than usual. He then sat down, and said, that he was easy, and could move his arm better. As soon as my apparatus Case 3.

was

CHAP. VII. Case 3.

was ready, and I had taken hold of his arm for the purpose of fixing the towels, I was surprised to find that the os humeri was reduced. There was now a natural roundness in the shoulder below the acromion, though before a hollow was felt upon pressing the deltoid muscle. His elbow, which before stood at a distance from his body, could now be pressed to his side with ease.

When the head of the bone has deserted the axilla, and has slipped under the pectoral muscle; I have observed, that it is brought back into the axilla the more readily, if the extension is made in a direction opposite to that in which it has passed from the axilla. This effect is often greatly promoted by making the extension with the arm elevated, as Mr. WHITE has advised. But when the head of the bone has advanced far under the pectoral muscle, strong extension, by closing the passage through which the protuberant part of the bone should return, often prevents, instead of promoting, reduction. A more successful method of managing these cases will be mentioned in the sequel *.

The difficulty of reducing a dislocated humerus,

* See Cases 8. and 9. pp. 313. & 315.

humerus, not only arises from the resistance, or compression, of the muscles; but also from the resistance which is made by the pressure of the glenoid process against the neck of the humerus, when the head of the bone lies deep in the axilla, beyond that process. This hindrance to reduction will be increased in proportion to the depression of the acromion; if the extension is made in a horizontal direction. For in this case, the edge of the glenoid cavity hitches against the neck of the humerus, and in some degree prevents the head of the bone from advancing forwards *.

In order to remove this hindrance, the head of the humerus must be lowered by elevating the

* The scapula, when moved by its own muscles, performs a degree of rotatory motion, (upon an imaginary axis passing through the centre of the bone in a horizontal direction) by which the acromion is elevated, or depressed. The elevation and support of the acromion is executed by the serratus magnus and trapezius muscles; every fibre of the latter concurring in a simultaneous and similar action. On the contrary, the acromion is depressed by the rhomboidei and levator scapulæ; though the action of the latter seems to have been generally misunderstood, as its title of *musculus patientiæ* indicates. The last mentioned muscles, descending obliquely from the spine, and being attached to the basis of the scapula, pull backwards and elevate the lower angle; and consequently bring forwards and depress the acromion and glenoid cavity.

CHAP. VI.

the arm: and the edge of the glenoid cavity raised from the neck of the humerus, by repressing the acromion.

When the edge of the glenoid cavity no longer presses against the neck of the humerus, the repressing of that cavity, while the head of the bone is brought forwards, must tend to make them meet the sooner; and, consequently, to render a less degree of extension necessary for the reduction. On this principle, I have now for several years preferred the method recommended by Mr. BROMFIELD, of repressing the acromion during the extension; and have laid aside that (which I formerly used) of bringing forward the acromion by pushing back the lower angle of the scapula.

If repressing the glenoid cavity facilitates the reduction, the fore-arm must be bent, and that previously to the application of the roller and towel, that the biceps may be relaxed as much as possible. For since that muscle is attached to the neck and coracoid process of the scapula, an extended state of the arm must hinder the repressing of the articular cavity, and thereby throw an impediment in the way of reduction.

A further hindrance to reduction arises from the interposition of the capsular ligament, which,

which, agreeably to the opinion of the late Dr. HUNTER, seems to be always lacerated in a complete dislocation of the joint. As a dislocation cannot take place, unless the head of the bone is depressed by an elevation of the arm, it is probable, that the laceration most frequently happens at the lower part of the capsule. But this may be torn from the neck of the humerus, or of the glenoid process, and present such an impediment to reduction as cannot be ascertained. CHAP. VII.

The reduction in the following Case perhaps arose chiefly, from the head of the bone accidentally eluding the impediment made by the lacerated capsular ligament; though the inactive state of the muscles, through fatigue, might contribute somewhat to the successful event.

CASE 4.

September 22d, 1774, I was called upon early in the morning to visit THO^{s} WALKER, of Woodlesford, a strong muscular man, and a stone-mason by trade, who had been thrown from his horse the preceding evening; and had been dragged for a hundred yards, or upwards, by his foot hanging in the stirrup. His left arm was dislocated at the shoulder; and Case 4.

CHAP. VII. Case 4.

and the head of the bone was lodged deep in the axilla, beneath the coracoid process of the scapula.

I first tried to reduce the bone by Dr. KIRKLAND's method, but in vain. I then directed the extension to be made in a vertical position of the arm, as Mr. WHITE advises*, until the Patient was raised from the ground; and immediately tried to reduce the bone with the heel in the armpit, but to no purpose. I made several other attempts, making the extension sometimes with the fore-arm at right angles to the os humeri, sometimes with the whole arm extended; varying also the direction of the extension. All my attempts were ineffectual. I desired my Patient to come to Leeds, that I might have the advantage of a pully, and the assistance of my Colleagues at the Infirmary. About eight ounces of blood had been taken from the arm before I was called. I directed a repetition of the bleeding, and the use of the warm bath, as soon as he should arrive at Leeds. I called a consultation at three in the afternoon, and was favoured with the assistance

* Cases in Surgery, p. 95; or Med. Observations and Inquiries, vol. ii. p. 373.

assistance of Messrs. BILLAM, JONES, and LUCAS, at the Infirmary. CHAP. VII.

The blood had been drawn as I directed; but he had not been put into the warm bath. Case 4.

Our first trial was made by raising the Patient from the ground by a cord, passing over two vertical pullies, and fastened to the arm above the elbow by suitable straps. I tried to push the head of the bone into its socket, while he remained in this state of suspension; but I could not effect it. Mr. BILLAM tried with his heel in the armpit, having a ball of cotton previously placed in the axilla: upon this ball was put the middle part of a long towel, the extremities of which I took hold of, lying upon the ground, with my foot placed upon the acromion scapulæ. When Mr. BILLAM made his extension, I assisted by a counter extension, pushing downwards the acromion, and elevating the head of the os humeri. This attempt also proved fruitless. We then repeated the suspension, intending to use Dr. KIRKLAND's method as soon as he should be let down. As we we were removing the straps from his arm, Mr. JONES suggested the idea of letting his arm fall down, without any farther extension. This was done

CHAP. VII. Case 4.

in a gentle manner, but so that the arm fell by its own weight. In this motion, the head of the bone slipped into its socket; but I did not perceive any jerk or sound, as is usual in the reduction of dislocated bones. As a good deal of force had been used in this case, it was thought prudent to take four ounces more of blood from him. He slept well that night, and the next day was pretty easy.

CASE 5.

Case 5.

October 22d, 1793, Mr. D. aged 60 years, and a strong muscular man, was brought to my house in the evening from A. about fifteen miles from Leeds, on account of a luxation of the right os humeri, which had happened the preceding evening by a fall from his horse. Attempts had been made in vain by an eminent Surgeon to reduce the bone. The head of the os humeri was sunk under the thick part of the pectoral muscle. After trying to effect the reduction while my Patient sat in a chair; and finding, that in this way I could not bring the head of the bone so far into the axilla as to feel it distly, I placed him upon the carpet on the with his right side towards a table, on which

which stood two assistants. By means of towels fastened round, or rather above, the condyles of the os humeri, they raised his breech from the floor. The extension made by this effort in a vertical direction, drew the head of the bone into the axilla. It seemed to advance as far as the acromion, and gave a snap against the acetabulum, so that I concluded the head of the bone had slipped into the socket. Upon letting the arm fall, I found, however, that the bone was not reduced. I then attempted the reduction with the heel in the armpit, and afterwards in Dr. KIRKLAND'S method, but without success.

I now took eight ounces of blood from Mr. D. and sent him to his inn in a chair; directing the application of a bread and milk poultice to the shoulder. A solution of the bitter cathartic salt was also given.

After Mr. D. had left my house it occurred to me, that as the vertical extension had brought the head of the bone into contact with the acetabulum, I should probably have succeeded in the reduction, if the assistants had moved forwards while the arm was in a state of extension, and had thereby inclined it a little towards the horizontal position.

CHAP. VII.

Case 5.

23d. In the morning I took Mr. D. to the Infirmary, where Mr. LUCAS and Mr. LOGAN met me at my request. Before any attempts were made to reduce the bone, six ounces of blood were drawn from the arm, while Mr. D. stood upright, as my design was to produce some sickness by the operation; but the evacuation did not sensibly affect him.

Another attempt was made to reduce the arm, by extension in a horizontal, and afterwards in a vertical, direction; but without success.

I then put in practice the method, which had the preceding evening given the greatest hopes of success; with the additional movements that had occurred to me after Mr. D. had left my house. Two towels were fastened round the arm, as before, just above and upon the condyles of the os humeri; the fore-arm being placed at right angles to the arm, and supported in that position by an assistant. Each towel was held by a person standing on the counter of the shop, while Mr. D. sat upon a carpet spread on the floor. I directed the assistants to elevate Mr. D. gently from the floor, and, while he remained elevated, to move slowly forwards in the direction in

which

which his face was placed. By this method the arm was first extended vertically, and then with an angle, gradually approaching towards a horizontal position. I stood behind my Patient, placing two fingers of each hand in the axilla, ready to push upwards the head of the bone, when I should feel it advanced sufficiently in the axilla. Before the arm was brought down to an angle of 45 degrees with the horizon, I made the requisite pressure upwards; and the head of the bone passed into its socket.

Mr. D. staid at Leeds till the next day; and seemed to have suffered less from the various attempts to reduce his arm, than one might have expected. He soon regained the use of his arm.

When a patient has had the misfortune to dislocate the same arm repeatedly, especially if the accidents which caused dislocation were slight; it may be prudent to secure the arm for some time against any great degree of elevation, to prevent a recurrence of the injury.

Mr. BIRKES, of Rothwell, had the misfortune to dislocate the os humeri at the shoulder, three times in the course of a few years. The

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the bone with his fingers, and push it into the socket. If he does not immediately succeed, let him wait a while longer; and, if necessary, direct the assistants to increase the extension in the most gentle manner, moving forwards as above mentioned, while the acromion is repressed by an assistant standing on the floor. Let it, however, be constantly kept in remembrance, that precipitancy in this operation, is one of the principal causes of failure, provided the extension is made in a proper direction.

The surgeon ought not hastily to consider any case of recent dislocation of the shoulder to be incurable, as I have repeatedly seen success attend a repetition (even on a subsequent day) of the same means, which on the first trial were unsuccessful. In such difficult cases, either the frequent extension of the muscles had brought them into a state of debility and non-resistance, and had thereby made the last efforts successful: or the last efforts had been accidentally better adapted to elude the impediment arising from the interposition of the capsular ligament. Both these circumstances might have contributed to the success.

Opportunities of dissecting the shoulder

CHAP. VII.

during a state of dislocation are so rare, that we still remain ignorant of the precise nature of the injury done to the several parts concerned, in ordinary cases. Mr. THOMPSON found the capsular ligament intirely torn off from the neck of the os humeri, the bone broken, and a shell of it torn off by the tendons of the supra & infra spinati muscles. It appears also, that the long tendon of the biceps muscle was torn from its groove, though he does not expressly say so. But we can scarcely imagine that so much injury is done to the bone in every dislocation. Dr. HUNTER was of opinion, from considering the structure of the joint, and from experiments made upon dead bodies, that the capsular ligament was lacerated in every dislocation of the shoulder: but he did not carry his opinion so far as to suppose that the ligament was always torn away from the neck of the os humeri, as in Mr. THOMPSON's Case, and as Dr. KIRKLAND afterwards observed in some experiments made upon brutes. It is remarkable, that no instance of dislocation of the os humeri, should have been found among the great number of bodies examined by that excellent anatomist MORGAGNI. He mentions one instance of a luxation of

the os femoris, but gives no other description of the state of the joint than that he found the round ligament relaxed *. CHAP. VII.

I once saw a compound dislocation of the os humeri, the head of the bone being pushed through the integuments in the axilla; and in that case the long tendon of the biceps was torn from its groove in the neck of the bone; the tendons of the supra & infra spinati muscles were also separated from the bone, and had torn off a large shell of bone, as in the case related by Mr. THOMPSON.

When the head of the bone has passed behind the pectoral muscle, to a considerable distance from the axilla, strong extension of that muscle has seemed rather to throw an impediment in the way of reduction, which was effected chiefly by pressure against the head of the bone; as in the three following Cases.

CASE 6.

HENRY BALDWIN, aged 62 years, was admitted a Patient of the General Infirmary, January 23d, 1801, for a dislocation of the shoulder. Case 6.

* Quod ad femur attinebat, revera luxatum inventum est, laxato videlicet eo ligamento quo femoris caput intra innominati ossis acetabulum alligatur.

Epist. LVI. Art. 7.

[illegible] by vertical or horizonta[illegible] [illegible] bring the head of the [illegible] After repeated fruitless [illegible] that eight ounces of blood [illegible] from the sound arm; that [illegible] be put into the warm [illegible] should be given, and [illegible] applied to the shoulder till [illegible]

[illegible] the soreness occa[illegible] [illegible] and the next day [illegible] as easy as he had [illegible] was used.

[illegible] bone lay at a consi[illegible] [illegible] socket, I was [illegible] of the pec[illegible] [illegible] a stricture [illegible] and thereby [illegible] returning into the

While I was using this method, without the aid of any assistant, my colleague, Mr. CHORLEY, who was with me, put his hand upon the head of the bone, which he could feel through the pectoral muscle, and thrust it towards the cavity of the joint. Our motions happening to correspond, the head of the bone passed easily into the axilla; and was then reduced without difficulty, two assistants making the extension while I pressed upwards the head of the bone. Case 6.

CASE 7.

JOHN BROOKSBANK, aged 60 years, and of a thin habit, was admitted March 9th, 1801, under the same circumstances. Mr. LOGAN, whose Patient he was, after some ineffectual attempts to reduce the bone by strong extension, made use of the method which had succeeded in the preceded Case. He moved the bone in various directions, while I pressed the head of it towards the glenoid cavity; into which, after a few trials, it entered, and the Patient was dismissed cured. Case 7.

CASE 8.

The same method of reduction was used with success in the Case of a middle-aged Man, Case 8.

CHAP. VII. Case 8.

Man, who was brought to the Infirmary in December 1801, with a dislocation of the os humeri, the head of which lodged behind the pectoral muscle. Pressure upon the head of the bone, assisted by gentle extension, brought it into the axilla, and the reduction was then easily effected.

I had used this method with success in a dislocation of the os femoris, nineteen years before the last recited cases occurred, as will be seen in the next Case.

On the Dislocation of the OS FEMORIS.

A dislocation of the os femoris at the hip-joint may happen two ways, either forwards and downwards, or backwards and upwards: but this accident, especially in the former way, is not so frequent as the dislocation of the os humeri. I will describe the symptoms of both these species of dislocation, and the method of reduction used in each case, as clearly as I can; and I hope the young practitioner may obtain some useful information from these descriptions.

CASE

CASE 9.

Case 9.

In July 1782, a middle aged, and pretty strong Man, was brought into the General Infirmary, who, by the fall of a waggon against him, had suffered the dislocation of the right os femoris backwards and upwards.

The inferior extremity on the affected side had an awkward appearance. It was considerably shorter than the corresponding limb. The toes were turned inwards. The thigh would not admit of a rotatory motion on its own axis. The limb could not be extended without pain to the Patient. When he was laid in a prone position, the head of the os femoris might be felt through the glutæus maximus, and nearly about the centre of that muscle.

According to the best judgment which I can frame from the anatomy of the parts, I should conceive, that the head of the bone lay at the edge of the sacro-sciatic notch, near the inferior and posterior edge of the glutæus medius. In this position, as the anatomical reader will readily conceive, the head of the bone lay toward the spine, and the great trochanter towards the side of the Patient.

CHAP. VII.

Patient. There was no apparent contusion on the hip.

Case 9.

To effect a reduction in this case, it was evident that the extension of the limb must be made in a right line with the trunk of the body; and that, during the extension, the head of the bone must be directed outwards as well as downwards. It appeared also, that a rotatory motion of the os femoris on its own axis towards the spine (the Patient lying prone) would elevate the great trochanter, would bring it nearer to its natural position, and direct the head of the bone towards the acetabulum. These circumstances being well weighed in consultation, it was determined to proceed in the following manner:

A folded blanket was wrapped round one of the bed-posts, so that the Patient, lying in a prone position, and astride of the bed-post, might have the affected limb on the outside of the bed. The bed was rendered immovable, by placing it against a small iron pillar, which had been fixed for the purpose of supporting the curtain rods. The leg was bent to a right angle with the thigh, and was supported in that position by Mr. LUCAS, who, when the extension should be brought

to

to a proper degree, was to give the thigh its rotatory motion, by pushing the leg inwards, that is, towards the other inferior extremity *. Case 9. Mr. JONES sat before the Patient's knee, and was to assist in giving the rotatory motion, by pushing the knee outwards at the same moment. I sat by the side of the Patient, to press the head of the bone downwards and outwards during the extension. Two long towels were wrapped round the thigh just above the condyles; one towel passing on the inside of the knee, the other on the outside. Three persons made the extension; but when we attempted to give the thigh its rotatory motion, we found it confined by the towel which passed on the inside of the knee and leg. We therefore placed the knots of both the towels on the outside; and in this position the extending force concurred in giving the rotatory motion. The first effort that was made, after the towels were thus placed, had the desired effect; and the head of the bone moved

* I have since found the rotatory motion here mentioned to be rather disadvantageous, if made before the head of the bone is brought down as low as the acetabulum. If the head of the bone is pressed closely against the sciatic notch, a small degree of rotation in an oppoposite direction tends to raise it, and afford some advantage during the beginning of the extension.

CHAP. VII.

moved downwards and outwards into the acetabulum.

The man recovered very well.

Thirty years had nearly elapsed, after the opening of the General Infirmary at Leeds, before any patient was brought to it with a dislocation of the thigh forwards and downwards. Nor had I, during a period of thirty-eight years, seen that accident in my private practice. During the year 1797, three patients were brought into the Infirmary, who had suffered this accident. Though I had never seen this disease, yet I had carefully considered it; and had determined to act, when called upon, according to the method laid down by Dr. KIRKLAND, the only author who had given me any satisfactory ideas upon the subject. I communicated these ideas to my Colleagues, when this case first occurred; and, meeting with their approbation, a method similar to that recommended by Dr. KIRKLAND was pursued with success in all the patients.

In this species of dislocation, as the head of the bone is situated lower than the acetabulum,

acetabulum, it is evident that an extension made in a right line with the trunk of the body, must remove the head of the bone farther from its proper place; and thereby prevent, instead of assisting, reduction. The extension ought to be made with the thigh at a right angle, or inclined somewhat less than a right angle, to the trunk of the body. When the extension has removed the head of the bone from the external obturator muscle, which covers the great foramen of the os innominatum, the upper part of the os femoris must then be pushed or drawn outwards; which motion will be greatly assisted by moving the lower part of the os femoris, at the same moment, in a contrary direction, and, by a rotatory motion of the bone upon its own axis, turning the head of the bone towards the acetabulum.

Before I relate the manner in which these three motions were effected, and combined, it will be proper to describe the symptoms which indicated the existence of this dislocation. The appearance of the affected parts in all the three patients was so exactly similar, that the description of any one of them will be sufficient. The head of the bone seemed removed to a somewhat greater distance from

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CHAP. VII.

the acetabulum in one patient, whose Case I shall now describe.

CASE 10.

Case 10. August 6th, 1797, SIMEON SLACK, aged 21 years, was brought into the Infirmary, on account of a dislocation of the right os femoris, occasioned by a fall from his horse. He was immediately put to bed, and placed in the position most easy to him. I found him lying upon his back, with his right thigh stretched outwards, and resting upon a pillow, with his knee bent. Any attempt to bring the thigh nearer to a right line with the trunk of the body, gave him great pain; nor could it be brought nearer to a right line, without making a considerable extension.

The right thigh appeared much thicker than the left, at its superior and interior part. The muscles were here upon the stretch. The hollow which may usually be felt between the flexor and extensor muscles, at the upper part of the thigh, was in this case filled up. The head of the bone could not be distinctly felt through the muscles; yet, from the appearance, and the touch, it was sufficiently evident, that the head of the bone lay upon the

great

great foramen of the os innominatum. It seemed probable, that it had receded so far from the acetabulum as to be in contact with the descending part of the os pubis. CHAP. VII. Case 10.

There was a considerable hollow at the upper and outer part of the thigh, where the great trochanter is usually felt projecting.

The right thigh appeared to be three or four inches longer than the left.

The foot of the affected limb was not turned outwards with respect to the knee, but maintained its usual relative position.

The following method of cure was put in practice with success:

The lower bed-post, on the right side of the bed on which the Patient lay, was placed in contact with a small immoveable iron pillar (about an inch square in thickness), such as in our wards are used for supporting the curtain rods of the beds. A folded blanket being wrapped round the bed-post and pillar, the Patient was placed astride of them, with his left thigh close to the post, and his right thigh on the outside of the bed. A large piece of flannel was put between the blanket and the scrotum, that the latter might not be hurt during the extension.

The Patient sat upright, with his abdomen

CHAP. VII.

Case 10.

in contact with the folded blanket which covered the bed-post. He supported himself by putting his arms round the post; and an assistant sat behind him, to prevent him from receding backwards. He was also supported on each side.

Two long towels were put round the lower part of the thigh, in the manner before described, after the part was well defended from excoriation by the application of a flannel roller. The knot, which the towels form, was made upon the anterior part of the thigh, that the motion intended to be given to the leg might not be impeded by the towels.

The thigh being placed in a horizontal position, or rather a little elevated, with the leg hanging down at right angles to the thigh, I sat down upon a chair, directly fronting the Patient, and directed a gentle extension to be made by the assistants standing at my left side. This was done with the view of drawing the head of the bone a little nearer to the middle of the thigh; and the extension had this effect. I then placed the two assistants, who held the towels, at my right side; by which means the extension would be made in a direction a little inclined to the sound limb. Mr. LOGAN stood on the right side of the Patient,

Case 10.

Patient, with his hands placed on the upper and inner side of the thigh; for the purpose of drawing the head of the bone towards the acetabulum, when the extension should have removed it sufficiently from the place in which it now lay.

I desired the assistants to make the extension slowly and gradually; and to give a signal when it arrived at its greatest degree. At that moment Mr. LOGAN drew the upper part of the bone outwards, while I pushed the knee inwards, and also gave the os femoris a considerable rotatory motion, by pushing the right leg towards the left. By these combined motions the head of the os femoris was directed upwards and outwards, or, in other words, directly towards the acetabulum; into which it entered at our first attempt made in this manner.

The scrotum, as the Patient assured me, was not hurt in the least by the extension.

The other two Patients, who were brought to the Infirmary in March preceding, had been treated on the same principle, but every step in the operation was not so distinctly marked. The first was a Boy, whose thigh was reduced while he sat upright, and astride

CHAP. VII.

of the bed-post. The second was a Man 27 years of age, who was not brought to the Infirmary till the sixth day after the accident. A bone-setter had been sent for the day after the accident, who used great force by the assistance of eight or nine men, as the Patient informed us. But as he made the extension in a right line with the trunk of the body, he failed of success. The Patient was rendered so sore by the extension, that he could not bear to be removed till the fifth day afterwards.

I placed this Patient in a supine posture, upon a bed laid on the floor. The extension was made by a single person, who stood upon a chair, and held the thigh in a vertical position, or rather somewhat inclined towards the Patient's abdomen. The motions given to the os femoris were nearly similar to those which I have described, and effected the reduction. The Patient was able to walk about the ward, without crutches, before the expiration of a week.

In all the three Patients the affected limb immediately after the reduction, was longer than the sound limb; but gradually regained its proper length.

CHAP. VII.

On the Dislocation of the lower Jaw.

THE practical Observations which I have to make on the treatment of this Disease are few; but they may be of some use to the young practitioner.

One of the condyles of the lower jaw is often dislocated, while the other remains in its proper place; and it is not always easy to know when this is the case. One would expect, from a consideration of the structure of the parts, and from the description given in systems of surgery, that the chin should be evidently turned towards the opposite side; but I have repeatedly seen the disease, when I could discern no alteration in the position of the chin. The symptom which I have found to be the best guide in this case is, a small hollow which may be felt behind the condyle that is dislocated, which does not subsist on the sound side. If the surgeon proceeds in the treatment of this partial dislocation, as if it had taken place in both condyles, he will throw an impediment in the way of the reduction, and perhaps will be foiled in his attempts.

The method of reduction recommended by

some of our best writers on surgery is, first to pull the jaw forwards till it moves somewhat from its situation; and then to press it forcibly downwards, and moderately backwards. The first part of this process does not appear to me necessary from theory, and in practice I have found it useless, to say the least. I have succeeded the best by simply pressing the lower jaw downwards, and backwards, with my thumbs placed as near the angles of the jaw as possible.

If both sides of the lower jaw are pressed upon, while one side only is dislocated; the reduction of the dislocated condyle is rather prevented. It is the best method, therefore, to examine carefully whether both the condyles are dislocated, before any attempt is made, and to apply the force to that side of the jaw only which has suffered dislocation. I am inclined to think, that the application of pressure to one side of the jaw at once will not be injurious, even when both condyles are dislocated, having repeatedly succeeded with ease in a complete dislocation, by reducing the condyles singly, after I had made an unsuccessful effort to reduce them both at one time.

I have known two persons in whom the dislocati

dislocation frequently happened. Not only yawning, but even opening the mouth incautiously in eating, would cause it. CHAP. VII.

On the Dislocation of the Thumb.

A peculiar difficulty attends the reduction, when the head of the metacarpal bone, which is joined to the first phalanx of the thumb, is luxated completely, and depressed towards the palm of the hand. A dislocation in the opposite direction is easily reduced.

A transverse section of the anterior extremity of the metacarpal bone exhibits the form of a wedge, the narrowest part being towards the palm of the hand. There are two tubercles on each side of the anterior extremity of the metacarpal bone, whence the lateral ligaments go off in part to the first phalanx of the thumb. Upon measuring the distance of these tubercles from each other, I have found those two tubercles which are nearest to the palm of the hand, to be only 3-8ths of an inch from each other, when the tubercles on the posterior part of the same bone were at the distance of 5-8ths of an inch. Supposing therefore the head of the metacarpal bone to be pressed forcibly between the lateral ligaments, towards

CHAP. VI. the joint of the joint, the extremity of the metacarpal bone passes like a wedge between the lateral ligaments; and having passed through between them, it cannot return, as the posterior small part of the bone presents itself to the more contracted aperture between the ligaments. From an anatomical consideration of the structure of this joint, it seems impossible that the metacarpal bone should pass in this direction to a complete dislocation, without tearing off some part of the lateral ligaments; yet so much of the ligaments may remain, as to prevent the return of the bone to its natural situation.

Whether these observations account for the difficulty of reduction in this species of dislocation, or not, I know from experience, that the reduction is in some cases extremely difficult, if not impracticable.

When I was a pupil at St. George's Hospital, in the year 17[illegible], a patient, who had suffered a dislocation of the thumb, was dismissed incurable, the Surgeons, who were men of the greatest eminence, not being able to effect the reduction. Mr. BLOMFIELD then informed the points, that he had known a Surgeon increase the force of extension to such a degree, in attempting reduction in this

 dislocation,

dislocation, that he tore off the thumb at the second joint. CHAP. VII.

In the year 1767, Mr. BILLAM, at that time a Surgeon in Leeds of considerable experience, came to my house with a young man, who by falling against a stone had dislocated the metacarpal bone of the thumb, in the manner above described. Mr. B. had attempted the reduction in vain, and we had jointly no better success. We tried not only by extension, accompanied with pressure upon the dislocated extremity of the bone, but also by giving the bone a kind of rotatory motion on its own axis; but all in vain. This case led me to examine the joint attentively, both in the skeleton, and in a preparation of the joints kept in spirits; and caused the observations which I have noted above.

Since the first Edition of these *Observations* was published, I have succeeded in reducing the bones of the thumb, when dislocated in the manner above mentioned, by pressure without extension. The pressure should be made against the luxated extremity of the first phalanx, which in this case lies upon the back part of the metacarpal bone.

I have lately been favoured with letters from Mr. EVANS, of Ketley, near Wellington in

CHAP. VII

in Shropshire, and Mr. CARWARDINE of Thaxted in Essex, on the subject of dislocations of the thumb.

Mr. EVANS informs me, that he had met with two cases of dislocation of the metacarpal bone towards the palm of the hand; in both which, extension, though repeatedly tried, had failed to effect a reduction. Unwilling to leave his patient without relief, he cut down upon the anterior extremity of the bone, thrust it out through the wound, and then sawed it off. In both cases, the reduction was then effected with the greatest facility. The wounds were immediately closed; and the parts united with little inflammation or tumefaction. Both patients recovered the use of their thumbs, nearly as well as before the accident; some motion in the joint being preserved.

Mr. CARWARDINE's case, which occurred in 1805, was a compound luxation of the anterior head of the first phalanx of the thumb. The posterior head of the second phalanx was left resting upon the back of the first phalanx, the extremity of the thumb standing upright. After repeated fruitless attempts to reduce the dislocated bones by extention, Mr. CARWARDINE succeeded, by pushing

pushing forwards that extremity of the second phalanx which rested upon the first, until he had brought the articulating surfaces into contact. He then turned the second phalanx round the projecting extremity of the first, and effected the reduction with ease.

The edges of the wound were brought accurately together with small strips of adhesive plaster; and the parts were kept cool, by washing them with some simple lotion, after they were covered with a thick coat of black japan, or coachmaker's varnish, to prevent the moisture from coming into contact with the sore. A small splint was applied; and an antiphlogistic treatment of the patient was pursued. The dressings were removed on the sixth day, when the wound was found united without suppuration. The patient retained the perfect motion of the joint; and in a few months it became as strong as ever.

CHAP. VIII.

On internal Derangement of the Knee Joint.

CHAP. VIII.

THE joint of the knee is so firmly supported on all sides by tendinous and ligamentous substances; that the bones of the thigh and leg are very rarely separated from each other, so as to form a *dislocation*, in the common sense of the term. Great violence must take place, and a considerable laceration must happen, before the tibia can be completely separated from the os femoris. Yet this joint is not unfrequently affected with an internal derangement of its component parts; and that sometimes in consequence of trifling accidents. The disease is, indeed, now and then removed, as suddenly as it is produced, by the natural motions of the joint, without surgical assistance: but it may remain for weeks or months; and will then become a serious misfortune, as it causes a considerable degree of lameness. I am not acquainted with any author who has described either the disease

or

or the remedy; I shall, therefore, give such a description as my own experience has furnished me with, and such as will suffice to distinguish a complaint, which, when recent, admits of an easy method of cure.

This disorder may happen either with, or without, contusion. In the latter case it is readily distinguished. In the former, the symptoms are equivocal, till the effects of the contusion are removed. When no contusion has happened, or the effects of it are removed, the joint, with respect to its shape, appears to be uninjured. If there is any difference from its usual appearance, it is, that the ligament of the patella appears rather more relaxed than in the sound limb. The leg is readily bent or extended by the hands of the surgeon, and without pain to the patient: at most, the degree of uneasiness caused by this flexion and extension is trifling. But the patient himself cannot freely bend, nor perfectly extend, the limb in walking; he is compelled to walk with an invariable and small degree of flexion. Though the patient is obliged to keep the leg thus stiff in walking; yet in sitting down the affected joint will move like the other.

The complaint which I have described may be brought on, I apprehend, by any such alteration

CHAP. VIII.

alteration in the state of the joint, as will prevent the condyles of the os femoris from moving truly in the hollow formed by the semilunar cartilages and articular depressions of the tibia. An unequal tension of the lateral, or cross ligaments, of the joint, or some slight derangement of the semilunar cartilages, may probably be sufficient to bring on the complaint. When the disorder is the effect of contusion, it is most likely that the lateral ligament on one side of the joint may be rendered somewhat more rigid than usual; and hereby prevent that equable motion of the condyles of the os femoris, which is necessary for walking with firmness.

The method of cure, which I am about to propose, must not be used while there is any inflammatory affection, or swelling of the joint; but only when these effects of contusion are removed. The following Cases will further illustrate the nature of this complaint; and point out the method which I have hitherto found successful in removing it.

CASE 1.

Case 1. In 1782, I was desired to visit the late WILLIAM SOTHERON, Esq. of Darrington; and found him affected with an inability of moving

Case 1.

moving the joint of one knee. This complaint came upon him suddenly, the morning of the day preceding my visit, as he was turning himself in bed. He felt some pain at the insertion of the tendon of the biceps femoris into the head of the fibula; and that tendon seemed to be rather upon the stretch; in other respects the appearance of the joint was perfectly natural. As Mr. S. was then in an emaciated state from other complaints, I had an opportunity of examining the joint to the greatest advantage. There was no swelling in any part of it. I could bend and extend the affected limb as readily as that which remained uninjured. There was no protrusion of the semilunar cartilages. My Patient felt no pain when I pressed my fingers upon the joint in any direction. He informed me, that he had twice before had a similar lameness, which at both times had left him instantaneously. He was chiefly uneasy at the continuance of this attack.

He had occasion to walk out of the room soon after my arrival; and I then observed, that he could not place his foot flat upon the floor, nor bend the joint as usual when he raised the affected limb in walking.

Soon after his return into the room, while he

CHAP. III. he stood talking with me, he cried out on a sudden, "I am quite well:" and immediately was able to walk about without the least degree of lameness.

CASE 2.

Case 2. In 1784, the Honourable Miss HARRIET INGRAM, now Mrs. ASTON, as she was playing with a child, and making a considerable exertion, in stretching herself forwards, and stooping to take hold of the child, while she rested upon one leg, brought in an immediate lameness in the knee joint of that leg on which she stood. The disorder was considered as a simple sprain, and a plaster was applied round the joint. As the lameness did not diminish in the course of five or six days, [illegible]

[illegible] could perceive [illegible] when the limbs [illegible] extension, [illegible] of the injured [illegible] more relaxed, [illegible] received no [illegible] affected knee [illegible] my Patient [illegible] she could not [illegible] walking, nor bend

bend it in raising the foot from the floor; but moved as if the joint had been stiff, limping very much, and walking with pain.

Case 2.

I thought it probable, that the sudden exertion might in some degree have altered the situation of the cross ligaments, or otherwise have displaced the condyles of the os femoris with respect to the semilunar cartilages; so that the condyles might meet with some resistance when the flexor or extensor muscles were put into action, and thereby the free motion of the joint might be hindered, when the incumbent weight of the body pressed the thigh bone closely against the tibia; though this derangement was not so great as to prevent the joint, when relaxed, from being moved with ease.

To remedy this derangement, I placed my Patient upon an elevated seat, which had nothing underneath it that could prevent the leg from being pushed backward towards the posterior part of the thigh. I then extended the joint by the assistance of one hand placed just above the knee, while with the other hand I grasped the leg. During the continuance of the extension I suddenly moved the leg backwards, that it might make as acute an angle with the thigh as

CHAP. VIII.

possible. This operation I repeated once, and then desired the young Lady to try how she could walk. Whatever may be thought of my theory, my practice proved successful; for she was immediately able to walk without lameness, and on the third day after this reduction she danced at a private ball, without inconvenience, or receiving any injury from the exercise.

Case 2.

CASE 3.

Case 3.

In October 1786, the young Lady, who is the subject of the last Case, had the misfortune to produce the same injury in her knee, in rising hastily out of bed. After the lameness had continued about a week, without any amendment, I was consulted. The method of cure above described was made use of, with the same immediate success.

CASE 4.

Case 4.

Master THOMPSON, of Hull, a pupil at the late Mr. HODGSON's academy in Leeds, suffered a contusion and sprain of the knee joint, by climbing up behind a post-chaise in motion, the wheel of which caught hold of his leg, and gave it a severe twist. I saw him a few hours after the accident. The joint was

swelled,

swelled, and in a very painful state. I directed him to be put to bed; and used such remedies as I judged most likely to prevent inflammation. The swelling and pain soon went off; so that he was able, at the expiration of a week, to move about. A plaster was then put round the joint, and he was permitted to walk out.

CHAP. VIII. Case 4.

From this time there was no improvement in the motion of the joint. He could run, but it was in a very awkward and imperfect manner; for he could not set his foot flat upon the ground. He was obliged in walking to rest upon his toes whenever he raised the sound limb from the ground, and to keep the knee a little bent, being incapable of extending the limb in a progressive motion. A person, observing the manner in which he performed this exercise, would have thought his knee to be stiff; yet there appeared to be no rigidity in the joint, when it was moved by the hands of another person, while he himself sat in a chair.

When he had remained in this state nearly a fortnight, without any amendment, I was persuaded that the condyles of the os femoris were prevented from moving in a true direction upon the tibia and semilunar cartilages;

CHAP. VIII.

eased; yet the injured knee ap- e the other. I could bend and limb without difficulty, and without pain; but when he walked he he joint no motion by the natural e muscles. He walked, to use ession, " as if he had no joint

Case 5.

ptoms led me to hope, that service to him by the extension hich I have described. But as remained so long without its could scarcely flatter myself tation of immediate success. bent the limb with rather I had used in the preceding the first trial he could not well as I wished. I repeated fter the interval of a few e immediately regained the g as well as usual, except that eakness for a few days.

several Cases of this Disease, ove described; but the symp- uent being similar, I shall not ler with a recital of them.

CHAP. VIII. Case 4.

either by some irregular contraction of the tendinous or ligamentous substances surrounding the joint, or by some other cause of internal derangement, which time might rather increase than remove. I determined, therefore, to attempt his relief by the method above mentioned. I extended, and then bent the limb to a considerable degree, repeating the operation two or three times. He was enabled immediately to walk in a natural manner, and in a few days regained the perfect use of his limb.

CASE 5.

Case 5. In Oct. 1790, the Rev. THOMAS DIKES, of Hull, who then lived at Berwick in Elmet, near Leeds, suffered a contusion of the knee, by the fall of his horse, as he was riding. The cuticle was rubbed off in some places. A violent pain was brought on, which continued in the knee for about an hour and half after the accident; and the joint during this time became swelled and discoloured. In the course of a week the swelling subsided. The *ceratum saponis* was then put round the knee, and he was permitted to walk a little. At the expiration of a month after the accident, his power of walking was not

at

at all increased; yet the injured knee appeared like the other. I could bend and extend the limb without difficulty, and without giving him pain; but when he walked he could give the joint no motion by the natural efforts of the muscles. He walked, to use his own expression, "as if he had no joint in the knee."

Case 5.

These symptoms led me to hope, that I might be of service to him by the extension and flexion which I have described. But as the joint had remained so long without its proper use, I could scarcely flatter myself with the expectation of immediate success. I extended and bent the limb with rather more force than I had used in the preceding cases; yet upon the first trial he could not use the joint so well as I wished. I repeated the operation after the interval of a few minutes; and he immediately regained the power of walking as well as usual, except that he felt a little weakness for a few days.

I have seen several Cases of this Disease, besides those above described; but the symptoms and treatment being similar, I shall not trouble my reader with a recital of them.

CHAP. IX.

On loose Cartilaginous Substances in the Joints.

CHAP. IX.

The existence of loose cartilaginous substances in the joint of the knee, has been noticed by several modern authors. The method of extracting these substances, and that of treating the patient after the operation, have been described by Mr. Bromfield, in the Appendix to his first volume of *Chirurgical Observations*; and by Mr. Ford, in the fifth volume of *Medical Observations and Inquiries*. This operation is considered by these authors as the only method of cure. But, although it has often been attended with success, yet, as the late *Medical Society* have observed, it has sometimes "been fol-"lowed with violent inflammation, fever, and "death itself." It would therefore be of service to mankind, could a method be invented of curing this disorder with safety, or rendering it of no inconvenience to the patient.

Such

Such a method I have found, in a few instances, in the use of a well-adapted laced knee-cap. And, as in one of these instances the disease was more than usually troublesome, I think I do not exceed the bounds of probability in hoping, that it will generally prove successful; at any rate, it deserves a trial before the dangerous operation of opening the joint is attempted: especially as there is reason to believe, that, in some cases, loose cartilaginous substances, or substances resembling them, are capable of becoming dissolved in the joint, without the assistance of any remedies. CHAP. IX.

CASE 1.

In October 1781, Mr. SNOWDEN, an Apprentice to a linen-draper in Leeds, consulted me on account of a loose hard substance, which he had lately felt in the joint of the knee. It seemed to be about the size of a hazel-nut. It passed very readily from one part of the joint to another, upon a gentle pressure, and during the ordinary motions of the limb. He became sensible of the existence of this loose substance in the joint, soon after his recovery from the effects of a contusion of the knee, which he had suffered from a fall; before which acci- Case 1.

CHAP. IX.

dent he had not the least complaint in the part.

Case 1.

While this substance remained in the interior parts of the joint, he could walk without inconvenience; but whenever it got between the condyles of the os femoris and the tibia, so that he could feel it through the capsular ligament, it gave him pain, and produced lameness.

These circumstances induced me to think, that the application of a knee-cap, laced closely, might retain the substance within the interior parts of the joint; or, at least, prevent it from remaining so long between the condyles of the os femoris and the tibia, as to create much uneasiness. The utility of this bandage exceeded my expectation: for he not only found no inconvenience from the moveable substance after he began to wear the knee-piece; but at the expiration of twelve months he assured me, that he was no longer sensible of the existence of the disease, even when he walked without his bandage.

CASE 2.

Case 2.

October 26th, 1781, Mr. BRIGHAM, house-steward to the late General CARY, consulted me

me on account of two loose substances in the joint of the knee, which rendered him unable to go about his usual employment, without considerable difficulty and pain. He informed me, that, about two years before, he had the misfortune to slip down a declivity in the front of Leven-grove House, the seat of General CARY; and thereby received so violent a sprain in his knee, that he was for a time unable to walk. When the immediate effects of the sprain were removed, he first perceived the substances in the joint. A variety of applications were made use of to relieve his lameness; and the application of a caustic was recommended for the removal of the loose substances; but to this proposal he would not consent. He had no degree of lameness or weakness in the knee, previous to the accident I have mentioned; but was stout and active.

Case 2.

Upon examining his knee, I found two loose and hard substances within the capsular ligament. They moved rapidly, upon pressure, from one part of the joint to another. I could sometimes feel them both at one time; but never found them in contact with each other. There was also a smaller cartilaginous substance (so I judged it to be)

attached

CHAP. IX. Case 2.

attached to the exterior part of the tendon of the vastus externus femoris. This was also moveable to a certain distance, and seemed to be situated on the outside of the capsular ligament. These substances incommoded him so much upon motion, that he was frequently compelled to stop in walking; and the pain which they caused was often so acute, as to make him cry out.

I found it more difficult to restrain the motion of the loose substances in this case, than in that of Mr. SNOWDEN; and therefore procured a *quilted* knee-piece, which was made under my inspection. I took an exact measure of the knee; and made the quilting to project in two places, where the knee-piece was to press upon the hollow part on each side of the patella: for there the substances usually made their appearance. I advised Mr. BRIGHAM to wear also compresses of plaster spread upon leather, on each side of the patella, if the quilting should not sufficiently restrain the motion of the loose cartilages.

General CARY informed me, in April 1784, that Mr. BRIGHAM, though not perfectly well, could walk about with ease; and even run, and leap, without injuring himself, or

usually

usually exciting pain. Wishing to know the issue of this case, I wrote to Mr. BRIGHAM, requesting him to inform me of the present state of his knee. In his answer, dated August 1st, 1791, he gives me the following account: CHAP. IX. Case 2.

"After I had worn your bandage a few "days, laced very tight, I found my knee "near perfectly well; and when I keep the "bandage tight it continues so still, and has "done ever since I was with you at Leeds: "but I can find the lumps not at all reduced, "though they are no hindrance to me in any "common exercise. But before I made use "of the bandage, I was not able to walk with-"out the assistance of either crutch or stick."

In January 1792, Mr. BRIGHAM called upon me at Leeds. He had ceased wearing the quilted bandage for several years, and now wore only a common laced knee-cap. The substances produced no impediment in walking, and were now seldom perceived. After a trial of ten years he had found this mode of treatment to answer every purpose he desired.

CASE 3.

August 1788, Mr. LEE, of Leaconfield Park, near Beverley, consulted me, and gave me the following account of his complaint: Case 3.

About

CHAP. IX.

Case 3.

About three months before this application to me, he received a violent stroke, from a horse, upon his knee; which caused a considerable swelling of the joint. Three or four weeks after this accident, when the swelling was dispersed, he perceived a small moveable substance in the joint, which gave him great uneasiness in walking. He consulted a surgeon of eminence in the neighbourhood, who advised the extraction of the substance, as the only method of cure.

Being apprehensive that the operation would be attended with some degree of danger, he was unwilling to submit to it without the concurrent opinion of some other surgeon.

I recommended the use of a laced knee-piece; from which he found such relief, that he could immediately walk with ease and firmness.

Sept. 20th, 1791, Mr. LEE called upon me in his road to Buxton, and informed me, that he had continued to wear the knee-piece till within the last month; when the rheumatism, affecting his knee as well as some other joints, had rendered the wearing of the bandage painful. He had not felt the loose substance for about two months before he left

off

off the use of his bandage; nor had he felt it since the bandage had been removed.

CASE 4.

Case 4. Being at York upon business, I was requested by the late Rev. Mr. CAPPE to examine the elbow of Mr. W. LEE, of Leeds, who was then under his tuition. This young gentleman had hurt the joint considerably by a fall in the street, betwixt five and six weeks before I saw him. I did not see the surgeon who had attended him; but was informed, that the extremity of the Olecranon was supposed to have been broken off, from the existence of some loose substances, which were discovered in the joint upon the subsiding of the swelling caused by the contusion.

Upon examination I could readily feel two loose, hard, and roundish, substances in the joint. The swelling being entirely dispersed, I could also distinctly feel the extremity of the Olecranon; and was persuaded, that the substances which I found in the joint were not pieces of bone broken off from that process. Mr. LEE could move the arm with freedom, and was not much incommoded by these substances.

The

CHAP. IX. Case 1.

The substances gradually diminished; and it last became entirely dissolved, as I should suppose, for they could not be felt in any position of the joint.

I cannot ascertain the period of the dissolution, as I very rarely examined the joint; and as several years intervened between my first and last examination of it.

REMARKS.

WHEN the preceding Cases occurred, I was not acquainted with REIMARUS's work *De Fungo Articulorum*: nor did I know, that bandages had been tried, and had been found useful in some instances for this complaint. The late Mr. MIDDLETON, serjeant-surgeon to the army, informed REIMARUS that he had cured a patient by the application of plaster and bandage to the knee: so that upon removing the bandage, after it had been applied some months, the disease did not return. Mr. MIDDLETON knew another case in which the same treatment had proved successful. But it is added, what I ought not to conceal, that the same method had been tried in St. George's Hospital without success, in one instance; in which the pain was increased while the substance was kept under the

the patella, although the patient had before found relief from this treatment. The substance was therefore removed by incision into the joint*.

These loose substances differ somewhat in their structure. Some have been found upon examination to be small bones, covered with a crust of cartilage; while others have been found cartilaginous throughout.

The origin of these substances remains yet obscure. Mr. FORD thinks it most probable, that in his patient, "the cartilage was pri-"marily attached by small ligaments to the "joint, but at length increasing in bulk, it "was separated from its attachment by the "injury received in the fall."† In one instance mentioned by REIMARUS, some disease seems to have existed in the joint before the patient suffered that contusion of the knee, which was followed by the perception of a loose substance.

"Æger ille in Nosoc. GEORG. licet in "eodem genu dolorem aliquem jam a tribus "annis senserat, accedente et a multo motu "tumore; hæc tamen gravia non fuisse, nec "corpusculum illud omnino se percepisse "aiebat antequam genu læserit." *Ib.*

In

* See Reimarus de Fungo Articulorum, § 27, 54, &c.

† Medical Obs. and Inquiries, vol. v. p. 329.

CHAP. IX.

In those instances which have occurred in my practice, the patients had neither the least degree of lameness, nor of weakness in the knee, prior to the injuries which they suffered in the joint. And this seems to have been the case in almost all the instances which have been published, where any notice is taken of the patient having suffered an injury in the joint.

As dissections of the knee have sometimes discovered the existence of cartilaginous substances, attached to the interior parts of the joint by small pedicles; and as these substances, when loose, may be so confined within the joint as to create neither pain nor lameness; the idea of their being *detached*, rather than caused to exist, by the accidents which have preceded the perception of them, seems very rational. On the other hand, as the causes of the generation of these morbid appendages of the joints are totally unknown to us; and as they have so often been first perceived after the joint had suffered some considerable contusion; it is not improbable, that in some cases the morbid state of the joint, after such contusion or other injury, may give rise to their production. This seems to have happened in the 4th of the preceding Cases.

If

If any case should occur, in which the patient can obtain no relief from a well-adapted bandage; but is under the necessity of submitting to the extraction of the loose substance; the surgeon ought to attend to the advice given by the late *Medical Society*, in the postscript to Mr. FORD's paper on this subject.

" Besides such chirurgical management as " may be thought best for keeping the lips of " the wound in perfect contact, the limb should " be kept immoveable, and every thing should " be avoided that can either irritate the part, " or heat the body."

considerable pain

them large) at different times, in the fore-arm; and two on the back part of the hand. Upon his recovery, however, no injury remained, except a stiffness of the last joint of the thumb, which had suffered the compound dislocation. Case 1.

CASE 2.

In January 1767, I was desired to visit JAMES OAKES, aged 30 years, who, in cutting some wood, which he held against his knee, with a sharp semi-circular knife, such as the coopers use, had divided the ligament of the patella, and a portion of the capsular ligament on each side of the patella. The accident had happened some weeks before I saw him. I found the knee swelled, somewhat inflamed about the internal condyle of the thigh, and very painful. The leg, though now kept constantly in a horizontal position, was œdematous. Case 2.

Mr. B. who was attending him, had introduced a seton at the external part of the wound, and had drawn it through an opening made on the outside of the thigh, a little above the external condyle, for the purpose of affording a free discharge to the matter of an abscess formed there. His pulse was very frequent; and he was obliged, on account of

CHAP. X. Case 2.

the pain, to take sixty or seventy drops of laudanum every night, which did not, however, procure much rest.

There was no apparent inflammation in the ham, when I first saw him; but in the course of a few days an abscess began to form itself there, which was opened as soon as the part became sufficiently prominent. The purulent matter, which was discharged, was dark coloured, and very fetid. After this opening, the swelling of the leg abated, and the matter, having a free exit, became better conditioned. The matter insinuated itself somewhat beneath the integuments of the leg and thigh; but by an enlargement of the wound, and the application of rollers, the extension of the matter was prevented.

The painful state of the joint and the symptomatic fever abated. Before the expiration of January, his pulse was come down to ninety, and he slept moderately in the night time, sometimes without an opiate. The seton was removed, and he was now permitted to sit up every day.

February 11th, his pulse was at sixty-two. The wounds after this time healed favourably, but a stiffness of the joint remained.

CHAP. X.

CASE 3.

In 1784, a stout young Man was brought into the Infirmary at Leeds, with a transverse wound penetrating the knee-joint just above the patella. Mr. LUCAS had the care of the accident-patients this week; but as he was out of town, I was requested to attend to this Case. Case 3.

The Patient had been working in the woods, and a woodman's bill had fallen from a bough above him; and, striking the lowest part of the thigh, had made a transverse wound about two inches in length, dividing the tendon of the rectus femoris close to the patella. A wound was made through the capsular ligament, so large that I could easily introduce my finger into the joint.

After examining the interior parts of the joint with my finger, that no extraneous body might be left there, I united the lips of the wound by three stitches of the interrupted suture; taking care to lay hold of nothing with the needle but the integuments. I could not remove all the blood from the inside of the joint, for that continued to flow as long as my finger remained in the wound. Neither could I favour the discharge of that blood

which remained in the joint, by any method of placing the limb which would answer my principal intention. But I hoped that, if inflammation could be avoided, the extravasated blood would be absorbed without danger.

That I might keep the knee quite steady, and the injured parts in a state of relaxation, I placed the man in a supine posture, with his leg upon a pillow in a heavy fracture-box; and covered the wound with ceratum saponis, spread upon a pledget of tow. This method kept the anterior parts of the knee, with the rectus femoris, in a state of the greatest relaxation; and the external air was excluded without making any pressure upon the injured parts. I gave directions that all possible care should be taken to prevent the motion of the joint upon any occasion.

The Patient complained of smarting in the wound for about half an hour after the dressing, but had afterwards no return of pain.

Mr. Lucas continued the same treatment, and cut out the ligatures upon the tenth day after the accident. The Patient recovered so well, that in the space of four weeks he became able to move about in the ward upon crutches.

He regained the perfect use of his limb.

CASE

CASE 4.

October 4th, 1798, SARAH SWORDIE, aged 18 years, was brought into the Infirmary, on account of a wound in the elbow-joint; which she had just received from the wadding of a pistol, fired very near her, during the rejoicing for Admiral NELSON's victory over the French fleet in the Bay of Aboukir. The wound was made near the olecranon, through the flat tendon of the extensor cubiti. The parts were contused and lacerated. The capsular ligament was divided so as to admit readily the introduction of a finger within the joint. A considerable number of grains of gunpowder were lodged in the integuments. I examined carefully the cavity of the joint, but could not find any extraneous substance lodged there. Case 4.

Though it was not probable, from the contused state of the parts, that an union by the adhesive process could be obtained; yet in order to diminish as much as possible the size of the wound, and excludo the external air, I drew the integuments into contact by some stitches of the interrupted suture. The young woman being put to bed, I placed the arm upon

CHAP. X.

Case 4.

upon a pillow, in an extended position, that the wounded parts might be kept in a state of relaxation. The arm was covered with a poultice made of bread and water. An opiate was given immediately, and a gentle laxative the next morning. The young woman was not suffered to get out of bed on any occasion; nor was her arm removed from the pillow, except when gently raised for the purpose of applying the poultice.

The symptoms of inflammation were trifling, and soon went off. The integuments had been so much contused, that the ligatures did but retain the wounded parts in contact for a few days. The edges of the wound then sloughed off; but the size of the wound was diminished by the lips having been retained in contact for some days. The arm became quite easy in the course of a few days.

On the 14th day I laid aside the poultices, and drew the lips of the wound towards each other with sticking-plaster.

The Patient regained the perfect use of the elbow; and December 5th was discharged cured.

CASE

CASE 5.

Case 5.

WILLIAM HIDE, aged 21 years, was brought into the Infirmary, May 9th, 1799, on account of a wound which he had just received in the ancle-joint by a hatchet. The stroke had been given in a perpendicular direction; and the instrument had not only divided the capsular ligament, but had also cut off a portion of the articular extremity of the tibia, about an inch in length, and half an inch in breadth; and a smaller portion from the edge of the astragalus. I dissected out the former; but the latter lay so deep in the wound, and was so strongly attached to the soft parts, that I judged it to be the most prudent measure to leave it in the wound; as I should not have been able to take up any blood-vessel that might have been wounded in the dissection. Besides, the attachment of this small piece of bone to the soft parts was so strong, that I was under no apprehension of its being cast off, or becoming injurious to the joint. The integuments were united by suture; and the limb was placed in the most easy position in bed, after being covered with a mild poultice.

The

CHAP. X. Case 5.

The future treatment of this Patient was committed to Mr. LOGAN, in whose absence I had taken care of him; who placed the limb in a fracture-box upon the third day after the accident. The inflammation was trifling. The poultice was continued about a fortnight. At the end of the third week the Patient was allowed to sit up, the wound being nearly healed; and at the expiration of the fourth week the wound was completely cicatrized. He was now directed to move the joint, and to walk a little; but by too great exertions he brought on an inflammation about the joint. Rest, with the repeated application of leeches, and the aq. litharg. acet. comp. removed the inflammation.

June 24th, he was made an out-patient, and was soon after that discharged cured.

CASE 6.

Case 6. GERVASE HODGSON, a little Boy, about five years of age, playing in the fields at the time of harvest, received a wound from a scythe, which divided the capsular ligament of the ancle-joint, and took off a small piece of bone on the inner side of the extremity of the tibia. He was brought to the Infirmary, and

and fell under my care. I united the divided integuments by suture, taking care to avoid any puncture of the capsular ligament. The limb was wrapped in a poultice, and the Patient confined to his bed. The integuments became inflamed, and the sutures burst open. An abscess was formed on the opposite side of the ancle, the opening of which gave him great relief. It was about two months before the wounds were healed, but he regained the perfect use of his ancle.

Case 6.

CASE 7.

JOHN SENIOR, aged nine years, was admitted into the General Infirmary, May 2d, 1801, on account of a contused and lacerated wound in the right arm. He was following a large iron roller, drawn by a horse, in the fields; and was holding a rope in his hand, which happened to become entangled with the roller while in motion, in such a manner that his arm was suddenly drawn beneath the roller. A large wound was made in the elbow-joint, and the arm; both of which had suffered great contusion. The capsular ligament of the joint was laid open; and the articular extremity of the os humeri was broken obliquely upwards, so that the greater part of the

Case 7.

CHAP. X.

Case 7.

the internal condyle of the bone was separated from the external, in the hollow which lies between these two projections.

As the external condyle of the os humeri, and the bones of the fore-arm, remained uninjured; as the great blood-vessels were entire, and the muscles had not suffered any considerable laceration; I determined to attempt the preservation of the limb. I first dissected out all the broken pieces of bone; and after placing the integuments in their natural situation, I united them by the interrupted suture. I wrapped the arm in a poultice of bread and water, and placed it in the most easy position upon a pillow in bed. The limb was kept in this position, except when elevated for the purpose of applying the dressings.

The contusion had been so great, that the integuments were cast off on the inner side of the arm, from one to two inches in breadth, from the elbow to the axilla; but no inflammation ensued. The Boy was quite easy, except during the times of dressing the wound. A sinus was formed under the integuments at the axilla, which I was obliged to open. The use of the poultice was continued till the tumefaction of the limb had completely subsided,

subsided, and the wound was filled with granulations. CHAP. X.

At the expiration of five weeks he was able to walk about the house. He was made an out-patient July 10th, and in August was discharged cured. Case 7.

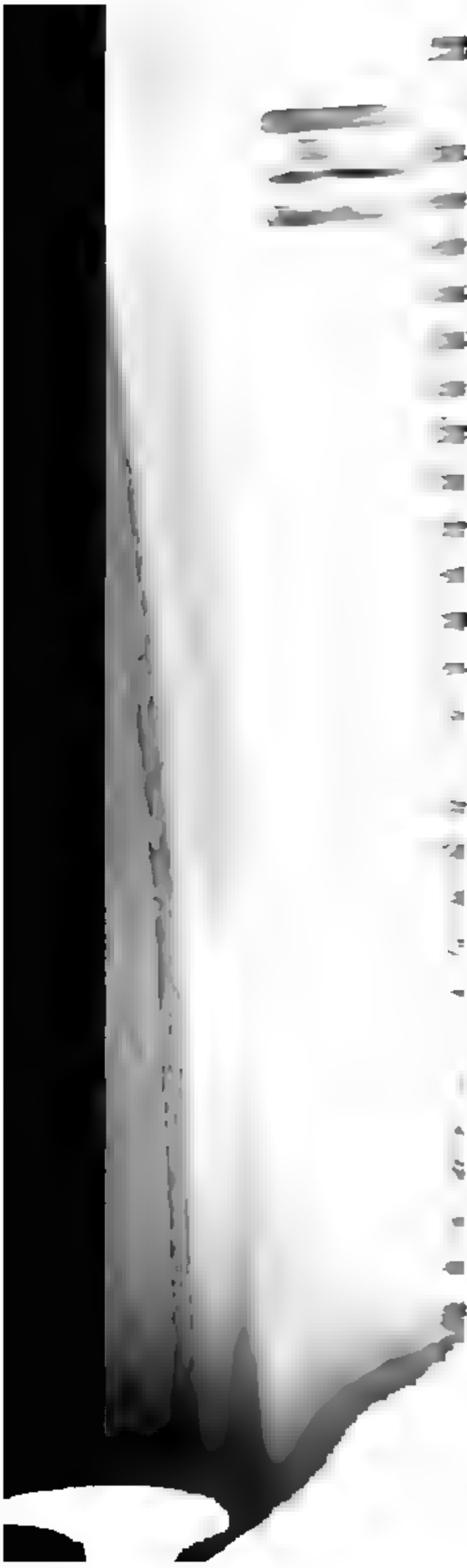
After the Boy was made an out-patient, the granulations became spongy, and somewhat foul; and the wound seemed indisposed for cicatrization. In this state he received great benefit from the following application, which is often singularly useful in scrofulous sores, when the granulations are spongy.

℞. Aq. puræ ʒ xv.
Spt. Rosmarin. ʒ j.
— Lavend. c. ʒ j.
Zinci sulphat. ʒ ss. fiat Solutio.

The sores were kept constantly covered with folded linen wet with this solution, without any other dressing. It was applied afresh three or four times a day.

CASE 8.

I was desired by Mr. WORMALD, Surgeon, who now resides at Harrowgate, to visit the Son of JOHN BARACLOUGH, of Adwalton; and to take with me every thing necessary for the amputation of his arm. Case 8.



CHAP. X. Case 8.

Being desirous of knowing how far the functions of the arm could be performed with the loss of the inferior articular extremity of the os humeri, I requested this Patient, then 15 years of age, to call upon me; that I might have an opportunity of examining the present state of his arm.

May 18th, 1802, he favoured me with a call, and permitted me to make such an examination as I thought proper.

The cicatrix extended from the tendon of the biceps to the olecranon, and was situated on the exterior side of the joint.

The tendon of the extensor triceps was attached, as usual, to the superior part of the ulna; but the olecranon might be moved in any direction, having now no support from the condyles of the os humeri. I could easily place my fingers on the hooked extremity of the olecranon, which now lay on the the inner side of the os humeri.

The inferior extremity of this bone extended downwards below the highest part of the ulna, and was attached to the middle of the cicatrix.

There was a round bag, about the size of a large nutmeg, containing some fluid substance, united with the extremity of the os

CHAP. X. Case 8.

humeri, and lying betwixt it and the olecranon. It seemed probable to me, that this might be a part of the capsular ligament, which I had left upon dissecting out the extremity of the os humeri; and which, having attached itself to the end of the bone, was now filled with synovia.

The head of the radius could not be felt. It seemed to be sunk deep amongst the muscles of the fore-arm, and was covered by the extremity of the os humeri.

The length of the mutilated bone was about an inch and half less than that in the sound arm.

The right fore-arm was moderately muscular and plump, but not so thick as the left. Above the elbow the right arm was much smaller than the left.

The young Man could perform the motions of flexion and extension very readily with the right arm; but not those of pronation and supination with the fore-arm alone. He imitated this motion very well by giving a rotation to the whole arm.

He could place his hand upon his head, by giving the arm a swinging motion; but he could not lift a glass of wine to his mouth. His father informed me, that he could lift

heavy weights, and do many other things with his arm in a depending position.

CHAP. X.

Case 8.

I was informed that he could write pretty well with the right hand; and I observed that he made use of his right hand, so as to give considerable assistance to the left, in putting on his neckcloth, which I had removed for the purpose of measuring the length of his arms.

CHAP. XI.

COMPOUND LUXATION OF THE ANCLE JOINT.

CHAP. XI.

WHEN the fibula is broken near the joint of the ancle, the tibia almost always suffers a partial dislocation. If the integuments are not lacerated by the tibia, it is easily replaced; and with due care the fracture may be cured without injury to the joint. But when the force is very great, which produces this fracture, the extremity of the tibia sometimes bursts through the integuments, and thus forms a compound luxation of the joint. This is a very serious accident; and the best mode of treatment has not yet been ascertained by surgical writers. Probably there are few surgeons who have seen a sufficient number of these cases, to enable them to form a decisive judgment on this subject.

The late Mr. GOOCH, who was an able surgeon, says, "If the surgeon should judge "it advisable to attempt saving a limb under "such

"such threatening circumstances, I am in- CHAP
"clined to think he will be more likely to XI.
"succeed by sawing off the head of the bone,
"especially if it has been long quite out, and
"exposed to the air*."

He then relates a case of this kind, in which Mr. COOPER, of Bungay, sawed off both the head of the tibia and fibula, by which means he preserved the limb, and made it so useful, that the patient was able to walk and work for his bread; of which success Mr. GOOCH was a witness. Encouraged by this success, I pursued the same method of cure in the following Case.

CASE 1.

September 16th, 1766, Mr. W. HEBDEN, Case 1.
about 56 years of age, was attacked by a bull, which threw him down, and caused a compound luxation of the tibia at the right ancle. The fibula was broken near the extremity of the tibia. The head of that bone, which lies below the tibia, remained attached to the astragalus. There was a considerable laceration of the integuments and capsular ligament on the inner side of the ancle; but on

* GOOCH's Cases in Surgery, p. 103, ed. 1st.

CHAP. XI.

Case 1.

on the outer side they remained whole. The tendo achillis, as well as the flexor and extensor tendons of the foot, appeared to be uninjured. About two inches of the extreme part of the tibia lay exposed, which I sawed off, together with the corresponding part of the fibula. The leg was afterwards placed upon its outside, in a relaxed position, and was covered with a poultice. An opiate was given.

2d day. He had rested well. Pulse ninety-five; full and hard. Nine ounces of blood were taken from his arm.

3d day. Pulse ninety-eight; not so full. Had rested tolerably without an opiate. A solution of cathartic salt was given.

4th day. Pulse seventy. Wound looked well.

6th day. Pulse seventy-six. Suppuration had taken place in a part of the leg, a little above the wound, which had been bruised by the bull. The matter had passed into the wound.

9th day. I made an opening on the outer side of the tendo achillis, to discharge the matter lodging in the wound, now become rather too offensive. Granulations shoot up well from the sides of the wound.

11th

11th day. Pulse eighty. The matter was discharged in part through the depending orifice. Granulations had arisen from the cartilaginous covering of the astragalus.

15th day. Pulse seventy-six. A large slough of the capsular ligament lay in the wound. Quantity of pus diminished. The bruised part above now discharged very little matter. Bandage is now used without poultice.

18th day. Pulse sixty-eight. The wounded part began to feel stiffer.

22d day. A glary fluid began to appear in the wound. The slough was cast off about this time. The wound continued to lessen very fast, being filled with granulations. His appetite good. He had been allowed animal food as soon as the first inflammatory symptoms ceased.

From this time he recovered well, and I left him to the care of the Surgeon who had been first called in.

I was in hopes that this Patient would have been able to walk stoutly; but in this I was disappointed. He walked indeed without a crutch; but his gait was slow, his leg remaining weak, and his toes turning outwards, which rather surprised me, as his leg

CHAP. XI.

was very straight when I ceased attending him.

Case 1. A light steel supporter, as recommended by Mr. GOOCH, ought to have been used in this case, when the Patient began to walk abroad.

I have not recited this Case with the view of recommending a similar practice in all cases of this accident; for I have not always adopted it; nor am I of opinion, that the same mode of treatment, whether by replacing the bones, sawing off their extremities, or amputating the limb, ought to be universally practised. When the laceration of the capsular ligament and integuments is no greater, than is sufficient to permit the head of the tibia to pass through them; and when at the same time the joint or contiguous parts have suffered no other injury; I should recommend the replacing of the bone, and an union of the integuments by suture, with the subsequent treatment above recommended in wounds of the joints.

CASE 2.

Case 2. In September 1798, I was desired to visit a young Man at Walton, near Wakefield, who,

Case 2.

who, by being thrown out of a whiskey the preceding evening, had suffered a compound dislocation of the tibia at the ancle. The Surgeon who was attending him had replaced the bone not long after the accident; and had put splints upon the leg, with a pretty tight bandage. I found the limb somewhat swelled, with a tendency to inflammation. The orifice, through which the tibia had passed, was considerably closed Under these circumstances, I did not think it necessary or proper to make any suture of the integuments; but after removing all compression, I placed the leg in a bent position on its outer side, and applied a mild poultice. The Patient recovered extremely well; but about three months after his cure, an ulcer took place in the integumeuts which had been lacerated; and finding that this did not heal readily, he came to Leeds, to put himself under my care. After the ulcer was healed, which happened in the course of three weeks, I procured a steel supporter, as the ancle was rather weak, and the tibia had a tendency to project inwards. This enabled him to walk with ease.

CHAP. XL

Case 3.

CASE 3.

January 1st, 1806, THOMAS CARLTON, aged 21 years, was admitted into the Infirmary at Leeds, and came under my care. By jumping hastily from the shafts of a cart in motion, he had caused a compound dislocation of the tibia at the ancle. His brother, who was with him, immediately reduced the bone, and wrapped up the limb. In this state he was brought to Leeds from the distance of twenty-nine miles.

No part of the bone now protruded; nor was the laceration of the integuments greater than might have been expected, considering the thickness of the tibia. The joint was somewhat red and swollen. I placed the leg on its outside, with the knee bent. A mild poultice was applied at first, and afterwards the lower part of the limb was covered with linen cloths moistened with distilled vinegar; the wound being defended by lint slightly moistened with the tinct. Benzoes comp.

The Patient continued easy during three weeks, and granulations of flesh began to arise on the lips of the wound. He then began to complain of pain in the abdomen. His pulse became frequent; his tongue was furred;

furred; and his countenance assumed a less favourable appearance. Small doses of rhubarb, with tinct. of opium, were given from time to time, from which he obtained some relief. An abscess now took place on the outer side of the ancle; and upon discharging the purulent matter the pain in the abdomen ceased; the fever left him, and he soon regained his appetite. CHAP. XI. Case 3.

February 7th, the wound was healed, but broke out again for a short time, upon changing the position of the limb. It afterwards became firmly cicatrized, and he was discharged cured.

CASE 4.

In October 1807, I was called to visit a corpulent Woman, who, by making a false step had brought on a compound luxation of the ancle. The extremity of the tibia had lacerated the whole of the capsular ligament on the inner side of the joint; but the articular surface of the bone did not appear to be injured. The limb had remained several hours in this state before I saw her. Case 4.

I reduced the bone, and united the integuments by suture. The leg was then placed on the heel; well supported on each side by pillows

CHAP. XI. Case 4.

pillows rolled up (for this Patient could not bear to lie upon her side;) and a mild poultice was applied.

She suffered very little pain from this accident; and passed the nights so comfortably, that she never had occasion to take an opiate.

On the 7th day an eschar began to form in the integuments, a little above the external ancle, near the fractured part of the fibula, which produced an ulcer, that was not entirely healed when I last saw her, Sept. 12th, 1809. There was also, at this time, a very small sore in one part of the cicatrix, on the inner ancle. How long this had subsisted I cannot say, as I had not been consulted during the last year and half. Neither had the Surgeon, who attended her in ordinary, had the care of the ulcer in the leg; but she had taken the management of it upon herself.

She had refused the use of a steel supporter, though we strongly pressed this measure, when we ceased attending her.

No symptom occurred during our attendance, that indicated any danger to her life or limb. Her leg was quite straight; the ancle was capable of a degree of flexion and extension; and she walked about in the streets,

without

without any other assistance than that of a common walking stick, at the date last mentioned. CHAP. XI.

Mr. TAYLOR, a Surgeon in Wakefield, who has the care of the sick belonging to a large Colliery in that neighbourhood, shewed me, in 1805, five specimens of the lower extremity of the tibia, which he had sawn off with success, in compound dislocations of the ancle. The portion of bone sawn off, was in two of the specimens very small; and in these cases, the recovery of the patient had been more speedy, than where a large portion of the bone had been removed. Small abscesses had formed in or near the joint in most of the cases, during the progress of cure, which was not completed till six, or even twelve months, had elapsed. All the patients, however, according to his information, had regained the power of walking firmly.

In one case the extremity of both the tibia and fibula had been removed.

The laceration of the joint may be so great, and the contusion so considerable, as to render it the most safe method to amputate the leg; but I am strongly inclined to think, that the loss of the limb is rarely necessary in a

compound

CHAP. XI.

compound luxation of the tibia, not attended with any additional injury, except a fracture of the fibula; and this must of course take place whenever such a luxation occurs, unless the astragalus is also dislocated.

Luxation of the ASTRAGALUS.

A luxation of the Astragalus, either simple or complicated with a laceration of the integuments, is an accident which does not often occur. It has, I apprehend, been considered till of late as incurable without amputation of the foot. Mr. GOOCH relates a case of simple luxation of this bone, in which this operation was performed on account of the impracticability of reduction.

CASE 1.

Case 1. A Case of compound luxation occurred in 1758, when I was a pupil of St. George's Hospital in London. The Patient was a corpulent Woman, who, in alighting from a horse, on which she had been riding single, happened to catch hold of the stirrup with the heel of one shoe. In consequence of this she came down to the ground, upon the other foot, with so much violence, that the inferior extremities of the tibia, and fibula, together

together with the astragalus, were forced through the capsular ligament and integuments. Mr. BROMFEILD, whose Patient she was, finding reduction to be impracticable, immediately amputated the leg, but the Woman did not recover.

Case 1.

We are indebted to Mr. TRYE, Surgeon to the Gloucester Infirmary, for his publication of Mrs. PALMER's Case, in 1802. This Lady had suffered a compound luxation of the astragalus (in 1789) "on the upper part of "the instep:" and as he could not replace the luxated bone, he cut it out; which, he observes, "was done without much difficulty. "An abscess was formed on the inside of the "leg, a little above the ancle;" but "in six "months she walked very well, with the "assistance of one stick, and an iron which "reached from the hip, had a joint at the "knee, and was fixed into the sole of a "high-heeled shoe*."

CASE 2.

I was encouraged by Mr. TRYE's success, to perform the same operation upon LUKE MOORBY,

Case 2.

* Illustrations of some of the Injuries to which the Lower Limbs are exposed, p. 30.

CHAP. XI.

Moorby, aged 43 years; who was brought into the Leeds Infirmary, Dec. 15th, 1804, on account of a compound luxation of the astragalus, on the inner side of the foot.

Case 2.

He was afflicted with the asthma, and on that account I was apprehensive of danger from the symptomatic fever, which would succeed either the amputation of the limb, or the excision of the bone: for reduction was impracticable.

He continued for some time in as favourable a state as I could expect; but the pulmonic disorder afterwards increased, and seemed to be the cause of his death, which happened betwixt two and three weeks after his admission into the Infirmary.

CASE 3.

Case 3.

Mrs. —— the wife of a farmer living about five miles from Leeds, suffered a fracture of the fibula, and a partial dislocation of the astragalus, by a fall from her horse.

The astragalus protruded on the outer side of the instep, just below and before the head of the fibula.

The Surgeon who was first called to her, had bound up the leg with tight bandage, and had made a compression on the projecting part

part of the astragalus, in hope of repressing it into its proper place.

Case 4.

I was not consulted till the twelfth day after the accident; and then found the Patient labouring under a considerable degree of fever, with the wound in a gangrenous state. A large portion of the astragalus still remained united with the tibia, so that the excision of the bone would have been very difficult, if not impracticable: and as the dangerous symptoms did not appear to me to arise from this partial luxation, but from the compression which the limb had suffered, my attention was directed to the removal of the fever and gangrene. I purposed, however, to take off the projecting portion of bone, by small saws, or other means, when the present danger should have ceased. The fever being removed, and the wound brought into a healing state, my Patient refused to permit any operation on the projecting portion of bone; and I ceased to attend her.

I called upon her in September 1809, to examine the state of her foot; when she informed me, that all that part of the bone which projected, had come away gradually in fragments, without any surgical assistance. The wound was perfectly healed; and the

CHAP. XI. Case 4.

cicatrix was nearly upon a level with the skin. The foot had not much deformity; and she could walk, as she assured me, eight or ten miles without inconvenience.

CASE 5.

Case 5.

Mr. CHORLEY, one of my Colleagues at the General Infirmary at Leeds, favoured me, at my request, with the following account of a compound luxation of the astragalus:

"In October 1805, I was sent for to "Dewsbury, to visit GEORGE GREENWOOD, "a stout man, between 30 and 40 years "of age; who had, eleven days previous to "my seeing him, fractured and dislocated "inwards, the astragalus of the right foot, by "a fall in descending a ladder. Until this "period, he had been attended by an irre- "gular practitioner, who had made several "violent and ineffectual attempts to replace "the dislocated part of the bone. Hot "dressings had been daily poured into the "cavity of the joint. As there was consi- "derable fever, and the limb much swoln, "I proposed to Mr. SWINDEN, surgeon in "Dewsbury, who was also called to attend "the Patient, the removal of the dislocated "bone; which I did without much difficulty;

"or

" or any injury to the tendon of the Tibialis " anticus muscle, which was tightly stretched " over the bone. Several small pieces of bone " were also removed from the cavity of the " joint. The limb was then laid in a relaxed " position, covered with a poultice.

" The astragalus was fractured at the neck. " That part of it which articulates with the os " naviculare remained in its situation.

" During the cure, which was completed in " about two months, there was considerable " sloughing from the cavity of the joint, which " appeared to be the whole of the capsular " ligament. Two abscesses also formed, and " were opened, near the outer ancle. In a " few months he was able to walk with the " assistance of a stick. He has recovered " some motion in the ancle joint; and now " walks with very little limp."

CHAP. XII.

On Retention of Urine.

CHAP. XII.

A Retention of Urine in the Bladder, when the natural efforts are incapable of affording relief, is, in male subjects, a disease of great urgency and danger. This retention may arise from a variety of causes, which operate as a mechanical impediment to the flow of urine; such as strictures in the urethra, calculous concretions fixed in any part of that canal, abscesses in the penis or perinæum, &c. each of which must require a specific mode of treatment. It is not my design, however, to enlarge upon these causes of retention; but to consider the disease in its most simple state; and to confine my observations chiefly to that mode of relief, which arises from the use of the catheter.

Persons advanced in years are more subject to this complaint than those who are young, or middle-aged. It is often brought on by an incautious resistance to the calls of nature; and, if not speedily relieved, generally

generally excites some degree of fever. It is sometimes attended with a considerable degree of fever; and an inflammatory affection of the bladder, which terminates in a discharge of purulent matter, and a fatal hectic.

The distinction which has sometimes been made, between a *suppression* and *retention* of urine, is practical and judicious. The former most properly points out a defect in the secretion of the kidnies; the latter, an inability of expelling the urine when secreted.

The disease of which I am speaking, under the term *retention of urine*, is, an inability, whether total or partial, of expelling, by the natural efforts, the urine contained in the bladder. The characteristic symptom of this disease, previous to the introduction of the catheter, is a distention of the bladder (to be perceived by an examination of the hypogastrium) after the patient has discharged all the urine which he is capable of expelling.

As this complaint may subsist, when the flow of urine from the bladder is by no means totally suppressed, great caution is required to avoid mistakes on this subject.

Violent efforts to make water are often excited at intervals; and, during these straining, small quantities of urine are expelled.

CHAP. XII.

Under these circumstances, the disorder may be mistaken for the strangury.

At other times, a morbid retention of urine subsists, when the patient can make water with a stream, and discharge a quantity equal to that which is commonly discharged by a person in health. Under this circumstance, I have known the pain in the hypogastrium, and distention of the bladder, continue, till the patient was relieved by the catheter.

And lastly, it sometimes happens, that when the bladder has suffered its utmost distention, the urine runs off by the urethra, as fast as it is brought into the bladder by the ureters. I have repeatedly known this circumstance cause a serious misapprehension of the true nature of the disease.

In every case of retention of urine which I have seen, the disease might be ascertained by an examination of the hypogastrium, taken in connection with the other symptoms. The distended bladder forms there a hard and circumscribed tumour, giving pain to the patient when pressed with the hand. Some obscurity may arise upon the examination of a very corpulent person; but in all doubtful cases the catheter should be introduced.

I have

CHAP. XII.

I have seen but a few cases of the *ischuria renalis*, or complete suppression of the secretion of urine by the kidnies. The disease proved fatal in all my patients, except one; in whom it was brought on by the effect of lead, taken into the body by working in a pottery. It subsisted three days, during a violent attack of the colica pictonum; and was then removed, together with the original disease. I found no difficulty in distinguishing this disorder, in any of the cases, from the *ischuria vesicalis*; though, for the satisfaction of some of my patients, I introduced the catheter.

Before I proceed to describe that method of introducing the catheter which I have found most successful, I shall premise a few anatomical observations on the parts concerned in this operation; and shall point out the principal difficulties which occur in it, when the disease is in its most simple state.

In all operations on the parts contained within the pelvis, it is necessary to keep in mind the angle which the axis of the pelvis forms with that of the abdomen. When the body is upright, the ossa pubis approach considerably towards a horizontal position. Now, as the bladder is connected with the

CHAP. XII.

posterior surface of the ossa pubis, the depressed position of these bones gives a considerable curvature to the membranous part of the urethra, which passes round their inferior angle. This part of the urethra is about an inch in length. Its coats are thin. They are unprotected by the corpus spongiosum, and are immediately surrounded by a yielding cellular and adipose membrane. The prostate gland, when divided horizontally, somewhat resembles the figure of a heart stamped upon a pack of cards. Its point is turned towards the ossa pubis. The urethra enters the gland at its point, and passes through it, running upwards and a little backwards. The greater part of the prostate gland lies behind the urethra. The neck of the bladder descends lower before than behind, and is much strengthened in its anterior part with muscular fibres.

In our attempts to introduce the catheter, we should have regard to the curvature of the urethra, its connexion with the contiguous parts, and the manner in which it passes through the prostate gland. If the curve described by the point of the catheter, in an attempt to introduce that instrument, is less than the curve of the urethra, it is evident

evident that the point of the catheter will be pushed against the posterior part of the urethra, instead of following the course of that canal; and no considerable degree of force is necessary to push the point of the catheter through that part, between the bladder and the rectum. If this accident is avoided, still the point will be pushed against the inferior surface of the prostate gland; and cannot, in this direction, enter the bladder.

The truth of this statement is further manifest from the assistance which one receives, in the introduction of the catheter (whenever it stops at the prostate gland) by elevating the point of the instrument with a finger introduced within the rectum. This gives a greater curvature to the course of the instrument, and facilitates its entrance into the prostate gland. When I come to describe the use of the flexible catheter, I shall mention another method of giving the point of the instrument a direction considerably curved, while it passes through the membranous part of the urethra; and shall further illustrate the advantage of this expedient. There is no great danger of pushing the point of the catheter through the anterior coats of the urethra; as they are supported by the ossa pubis,

CHAP. XII.

pubis, and as the urethra enters and passes through the prostate gland in a direction nearly vertical.

The difficulty of performing this operation, arising from the causes above mentioned, shews the impropriety of pushing forwards the point of the catheter before its handle is sufficiently depressed. If the catheter is pushed on while its handle is in a vertical position, it is evident that the point must move in a horizontal direction. Any force used in this direction greatly endangers the wounding of the urethra. But if the catheter is pushed forwards when the handle is in a horizontal position, the point of the instrument will then ascend in a vertical direction; which is the most proper for its passing through the membranous part of the urethra, and prostate gland, without injury.

Another difficulty, which sometimes occurs in the introduction of the catheter, arises from the inflamed and dry state of the urethra. In this case the catheter does not move freely in the urethra; and the proper turns cannot be made with ease and exactness.

The previous introduction of a bougie, well covered with lard, greatly facilitates, in this

case,

case, the passage of the catheter. But great caution should be used if the bougie meets with resistance; as even this instrument is capable of penetrating the coats of the urethra, when its point does not take a proper direction.

CASE 1.

Case 1. I was called one morning to assist a young Man, who had been in great pain all the preceding night, from a retention of urine; and who had been drinking freely of gin, to enable him to make water. I immediately made use of an elastic gum catheter, covered with fresh lard, which entered the urethra without difficulty. It had scarcely passed half the length of the penis, when the resistance became so great, from the adhesion of the urethra to the instrument, that I thought proper to withdraw it. That part of the catheter, which had been in the urethra, appeared dry, as if it had been wiped with a cloth. I then introduced a small bougie, well anointed, which dilated and moistened the urethra; and thereby enabled me to introduce the same catheter with ease.

Having premised the preceding general observations, I shall proceed to point out the method

CHAP. XII.

method of directing the catheter, which I have found most effectual.

I place my patient upon a bed, in a recumbent posture, his breech advancing to, or projecting a little beyond, the edge of the bed. If the bed is so high, that his feet do not rest upon the floor, I support the right leg by a stool, or by the hands of an assistant. The patient's head and shoulders are elevated by pillows; but I leave the lower part of the abdomen in a position nearly, if not entirely, horizontal. I commonly introduce the catheter with its convex side towards the abdomen; and, having gently pushed down the point of the instrument, along the symphysis pubis, till its passage in that direction is stopped by the curvature of the urethra, I turn the handle of the catheter towards the navel, pressing at the same time its point against the symphysis pubis. Without this pressure, the point of the instrument is apt to recede; and in that case it does not readily enter the membranous part of the urethra. In making the turn I sometimes keep the handle at the same distance from the patient's abdomen, and sometimes make it gradually recede; but in either method, I avoid pushing forwards

forwards the point of the catheter any further than is necessary to carry it just beyond the angle of the symphysis pubis. When I feel that the point is beyond that part, I pull the catheter gently towards me; hooking, as it were, the point of the instrument upon the pubis. I then depress the handle, making it describe a portion of a circle, the centre of which is the angle of the pubis. When the handle of the catheter is brought into a horizontal position, with the concave side of the instrument upwards, I push forwards the point, keeping it as close as I can to the interior surface of the symphysis pubis; for when passing in this direction, it will not hitch upon the prostate gland, nor injure the membranous part of the urethra*.

These directions are equally applicable, whether the surgeon, in making the turn, moves the catheter slowly, without taking hold of the penis, as Mr. WARE advises†; or

* In giving instructions to my pupils respecting this operation, I advise them to conduct the instrument as if the urethra was glued to the symphysis pubis on both sides (that is, both within and without the pelvis); observing that, although this is not anatomically true, the idea will lead them to act in a manner most conducive to a successful and safe introduction of the catheter.

† Memoirs of the Medical Society, vol. ii. Art. 30.

CHAP. XII.

or moves it somewhat rapidly, holding the penis in the left hand, as other authors have advised.

They are applicable also, when the catheter is introduced with its concave side towards the abdomen*; except that, instead of making the turn, the handle must from the beginning be kept near the abdomen, till the point has reached the angle of the symphysis pubis. The same method likewise, mutatis mutandis, may be followed, if the patient remain in an erect posture during the operation†.

I have hitherto supposed the surgeon to make use of a silver catheter. If he uses a flexible one, covered with elastic gum, it is of great consequence to have the stilet made of some firm metallic substance, and of a proper thickness. I always make use of brass wire, for this purpose, about 1-10th of an inch in thickness. If the stilet is too slender, the catheter will not preserve the same curvature during the operation; and it will be difficult, if not impossible, to make the point of the instrument pass upwards behind the symphysis pubis

* BELL's Surgery, vol. ii. p. 34.

† During a few years past, I have more frequently used the method mentioned in this paragraph.

pubis in a proper direction. If the stilet is too thick, it is withdrawn with difficulty. CHAP. XII.

When the stilet is of a proper thickness, this instrument has one advantage over the silver catheter, which is, that its curvature may be increased while it is in the urethra. This alteration in the shape of the instrument is often of great use when the point approaches the prostate gland. The advantage to be obtained by it first occurred to me on the following occasion.

CASE 2.

I was introducing the elastic gum catheter in a Patient whose prostate gland was much enlarged; and upon whom the operation was, on this account, rendered difficult. Finding some obstruction near the neck of the bladder, I determined to withdraw the stilet, that I might see whether the urine would run off through the catheter. When I began to draw out the stilet, holding the catheter with my left hand, I rather repressed the instrument; and was agreeably surprised to find, that as I drew out the stilet, the catheter passed into the bladder. Case 2.

This accidental success put me upon considering the effect produced by withdrawing

CHAP. XII.

the stilet; and I immediately perceived, that as soon as the stilet is moved, the curvature of the catheter is increased. In the operation, therefore, by this motion of the stilet, the point of the catheter must be lifted up; and will thereby be prevented from striking against the inferior surface of the prostate gland, and will be directed into the neck of the bladder. This discovery has been of great use to me in many difficult cases. It will be understood by any one, who observes the motion which a flexible catheter makes upon withdrawing the stilet*. The effect, however, is lost, if the stilet be too slender; for in that case it is rendered straight by the act of withdrawing it, and consequently it cannot increase the curvature of the catheter.

There is another method of introducing the elastic gum catheter, which sometimes answers very well; though it will not always do so. It is this. Take a catheter which has acquired a considerable degree of curvature and firmness, from having lain by for a long

* The effect of withdrawing the stilet in part will be fully understood by a view of the second Figure in Plate 11. The dotted lines represent the curvature which the catheter takes in the act of withdrawing it.

long time with a curved stilet in it *. Introduce this, without the stilet, with its concave side towards the abdomen; observing the caution above given, to avoid pushing forward the point of the instrument, when it has arrived at the symphysis of the pubis, until its handle is depressed into a horizontal position. If the urethra has not been injured, and is in a moist state, this method often succeeds; but chiefly after an elastic catheter has been kept for some days in the urethra. Cases occur, where a frequent extraction of the urine is necessary, and where the surgeon is at such a distance from his patient as to be unable to give a frequent attendance. Under these circumstances, if the patient cannot be removed, we are under the necessity of leaving a catheter in the urethra, until the method last described can be performed with ease. It may then be committed to the care of a dexterous and intelligent

* A catheter, which has acquired the exact form of the urethra, would be preferable; but such an one cannot always be procured.

The exact form of an old flexible catheter, which had lain a considerable time in the urethra, and which had so much rigidity as to retain its form after it was withdrawn, is given in Plate 11. fig. 1.

Chap. VI

negligent servant, or even of the patient himself.

Whatever method of performing this operation is pursued, the catheter should be introduced with the greatest gentleness. When any obstruction occurs, the design of the surgeon should be to *evade* rather than *overcome* it. Unsuccessful attempts may render a case extremely difficult, which was not so before. I wish to impress upon the mind of my reader, that a moderate force, improperly directed, is capable of injuring the urethra in such a manner, as to render the operation almost (and without a just knowledge of the injury, altogether) impracticable. It must be obvious to every surgeon, that long continued or violent attempts, have a tendency to increase the inflammation of the urethra. But the accidents to which I mean particularly to direct the attention are, the formation of a kind of pouch in the urethra, and the laceration of its membranous part. I shall relate an instance of each of these; and describe the methods used to surmount the difficulty which they afforded to the introduction of the catheter.

CASE

CASE 3.

I was consulted for a Gentleman advanced in years, who laboured under a retention of urine, attended with much fever, and pain in the hypogastrium. His Surgeon had repeatedly drawn off the urine; but could not any longer introduce the catheter, on account of an obstruction in the most depending part of the urethra, in its passage through the perinæum. Before I made any attempt to introduce the catheter, I gave the Patient, with the concurrence of the Physician and Surgeon who were attending, fifty drops of tinct. opii, and put him into a warm semicupium. As he was now much reduced, and of a gouty habit, bleeding was not used. As soon as he was taken out of the warm bath, I placed him in the position above described *; and attempted to introduce the catheter with its convex side towards the abdomen. When the point of the instrument arrived at the lowest part of the urethra, I made the turn as usual; but could not elevate the point behind the symphysis pubis. The urethra seemed to be completely obstructed, as if it had terminated at the

Case 3.

* Page 396.

[illegible] I have mentioned. I had no reason to [illegible] that the urethra was lacerated, as the [illegible] part felt smooth; but I appre- [illegible] that a kind of pouch was formed [illegible] the dilatation of some crypta of the [illegible] or in some other way) which acted [illegible] in the canal. As in all the [illegible] to introduce the catheter, its convex [illegible] had been directed towards the abdomen, I [illegible] there was reason to conclude, [illegible] was formed in the posterior [illegible] I judged, therefore, [illegible] evading [illegible] point of [illegible] introduction, as [illegible] urethra as [illegible] the direction [illegible] and was [illegible] keep its [illegible] anterior side [illegible] side of the [illegible] abdomen. [illegible], prevented [illegible] entering [illegible] urethra; and [illegible] bladder. The [illegible] was re- [illegible] by the assistance of

of gentle laxatives, with cooling and demulcent medicines, and a proper diet, our Patient recovered.

The greatest impediment to the introduction of the catheter (in cases of simple retention of urine) arises from the laceration of the membranous part of the urethra; when the point of the instrument has passed through it, between the bladder and the rectum. I am not aware that I have ever met with a case, in which the urethra was perforated between the bladder and the ossa pubis; nor do I think such an accident is likely to happen. Many authors have given cautions against injuring the membranous part of the urethra; but I do not recollect any one, except Mr. BROMFEILD, who has spoken of this injury as a case which he had often met with. Mr. B. says*, "I have seen *several* "*instances*, where, from a slit having been "made through that part of the urethra by "the instrument, and in order to prevent "future suppressions, bougies have been used; "the consequence was, that the bougies find-"ing a readier passage through the slit, than "into

* Chirurgical Obs. vol. ii. p. 302.

[illegible] the neck of the bladder, a false route [illegible] obtained. Three instances of which [illegible] He then relates the case [illegible] who had been repeatedly searched [illegible] himself, and another eminent surgeon: neither of whom could ever make the sound pass into the bladder, on account of a perforation in the membranous part of the urethra, between the bladder and the rectum.

I am now fully persuaded, that this accident occurs more frequently than is commonly imagined: that it may happen in the hands of a surgeon accustomed to introduce the catheter, and when no great force has been used: and that it always renders the operation difficult, and sometimes impracticable, to those who are not aware of the nature of the difficulty which they have to encounter.

And here I confess, that it was an error in my own conduct which first led me to consider this subject with peculiar attention; and which has since enabled me to preserve the life of some of my fellow [illegible].

A little Boy was brought to me about [illegible] years ago, who had symptoms of a

stone

stone in the bladder. I had not at hand a sound small enough to enter his urethra, except one which had its point somewhat conical. I had then been much accustomed to introduce the sound and catheter; and was not conscious of using any improper force at this time. However, when the instrument had passed to a sufficient extent, I found reason to suspect that it was not in the bladder. Upon introducing my finger into the rectum, I was surprised to feel the sound so distinctly through the coats of the intestine, as to leave no doubt that I had perforated the membranous part of the urethra betwixt the prostate gland and the rectum. I immediately withdrew the sound, and dismissed the Boy for that time, who suffered no other inconvenience from this accident than a little smarting for a few days upon making water.

This injury arises chiefly, I apprehend, from the method (which, as far as I have seen, is not an uncommon one) of pushing forwards the catheter before its handle has been depressed. By this method, the course of the instrument crosses that of the urethra; and the point of the catheter, pressing against the posterior side of the membranous part

CHAP. XII.

of the urethra, is easily forced through the coats of that canal. The want of due curvature in the catheter, and of sufficient bluntness in its point, greatly contribute to facilitate this injury.

When the membranous part of the urethra has been pierced, the point of the instrument passes more readily into the wound, than into the bladder. For the wound being made near the prostate gland, where an elevation of the point of the instrument is required; it becomes very difficult to avoid the aperture, and pursue the natural course of the canal.

The following Case will point out the method which I have used to ensure success in the operation, when rendered difficult by this accident.

CASE 4.

Case 4. In January, 1787, I was desired to visit an old Gentleman forty-five miles from Leeds, who was labouring under a retention of urine, and could not any longer be relieved by the Surgeon who attended him. I arrived at three in the morning; and found a Physician with him, as well as the Surgeon, waiting my arrival. The latter gave me the following history

Case 4.

history of the case: That Mr. M. having been seized with a retention of urine betwixt three and four weeks before, he (the Surgeon) had extracted the urine without difficulty, and had repeated the operation twice, and sometimes thrice in the day, during three weeks. He then began to find some obstruction in the urethra near the prostate gland; which increased at every operation, till he was unable any longer to introduce the catheter. The Patient had now been three days without relief; and the bladder was largely distended. Upon introducing the catheter, its point, when it had approached the prostate gland, passed into a substance that felt ragged and fibrous. I had no doubt, from this sensation, that the posterior side of the urethra was perforated. The object now was to keep the point of my catheter close to the anterior side of the urethra, as it passed through its membranous part; that I might avoid the wound, which the point of the instrument entered with readiness. The stilet of my flexible catheter, which I first used, was rather too weak; I therefore bent a silver catheter, at the distance of about an inch from its point; that, having a greater curvature than usual in that part, I might be

enabled

CHAP. XII. Case 4.

enabled to keep the point of the instrument more closely in contact with the anterior part of the urethra, and thereby pass over the wound made in the posterior side of that canal. This method, assisted by the mode of introduction already described, was attended with success; and I drew off about four pints of urine.

As I could neither stay with my Patient, nor leave him with propriety in this situation; I thought it necessary to introduce an elastic gum catheter, which might remain in the urethra till the wound should be healed. I procured some brass wire of a proper thickness, with which I made a stilet; and having given it the same curvature as that of the silver catheter with which I had extracted the urine, I introduced it about four hours after the former operation, and fixed it by tying it to a bag truss put upon the Patient.

It is remarkable, that I drew off a quantity of urine from the bladder, that had been emptied but four hours before, nearly equal to that which was found in the bladder, after the retention had subsisted three days.

The life of my Patient was preserved at this time; and the catheter was suffered to remain in the bladder. After some weeks,

an

an inflammatory affection ensued, which brought on a discharge of purulent matter; and the Patient died hectical about six months after my visit*. Case 4.

I could relate other Cases of a similar nature, which have occurred to me; but as I have succeeded with the assistance of an elastic

* The following accounts, which I received from Mr. M.'s Surgeon, shew the progress of the complaint after my visit.

"Feb. 19th, 1787."

"Our Patient, Mr. M. seemed to enjoy a good state "of health from Jan. 4th, to Feb. 4th, when he had a "discharge from the urethra similar to that of a gleet, "attended with a little inflammation of the glans penis. "He has also for this week past found a little uneasi- "ness when he wanted to have his water drawn off." (I suppose by taking the cork out of the flexible catheter, which I had left in the urethra.)

"July 1st, 1787."

"Mr. M.'s complaint still continues.——The irrita- "tion is so great as to require the water to be drawn off "every two hours. For some time past there has been "a quantity of mucus and pus rather fetid discharged "with the water, which has been so corrosive as to "destroy the instrument you left, and also one that was "introduced the 27th ult. For the last fortnight the "discharge has been less offensive, but mixed with "blood, which alarms him much.

"The flexible catheter is constantly withdrawn, when "Mr. M. jun. is at home, except in the night, when "his father dare not sleep without it. He," (the son, I suppose) "can introduce the flexible one very well, but "cannot the common one."

CHAP. XII.

elastic gum catheter, either by withdrawing the stilet in part at the moment when I wished to increase the curvature of the catheter, or by giving the instrument a considerable degree of curvature previously to its introduction, I shall not trouble my reader with a more particular relation.

In one Case, where the urethra had been injured near the symphysis pubis, by a violent contusion, (my Patient's horse having fallen backwards upon him, and struck the parts with the pommel of the saddle) I drew off the urine with a silver catheter of unusual thickness, after I had failed with instruments of a smaller bore. In this case I suspected a rupture of the urethra, and was obliged to elevate the point of the catheter with my finger in the rectum, before it would pass the injured part. I was also obliged to use repeated bleeding, purgatives, the warm bath, and large doses of opium, before I could succeed in the introduction. After the first introduction I used the elastic gum catheter, in the manner above directed.

The invention of the flexible catheter, covered with elastic gum, has been of great utility in this important operation of surgery. But it is a question not yet decided, whether the

the cure is more promoted by leaving the catheter in the urethra until the patient regain the power of expelling his urine, or by extracting the urine twice or thrice a day, and withdrawing the catheter after each operation.

As far as it concerns the removal of the inflammatory symptoms, I do not see that any general rule can be laid down. I have seen some patients who could not bear the catheter to remain in the urethra without great uneasiness; while others have recovered from the first inflammatory stage of the disease, even in bad cases, without appearing to be hurt by wearing the catheter constantly. Yet, upon the whole, I prefer the removal of the catheter after each operation, in all ordinary cases; and now always use this method, when my patient is near, and under my own immediate care.

With regard to the respective merits of these methods, as promoting the complete cure of the disease, my opinion seems at present to be decided. I have tried these different methods so often, and in cases so nearly similar, that I can scarcely entertain a doubt, that a person regains the power of expelling his urine much sooner when the

CHAP. XII.

catheter is withdrawn after each operation, than when it is left in the urethra.

The best method of retaining the catheter in the urethra, which I have tried, is the following. To each side of a bag truss, made with a strap to go over the penis, I sew on three small loops of tape. The lower loops are fixed to the middle of the truss; the two higher to the extremities of that part which goes over the penis. When the truss is put on, and a piece of very narrow flat tape is put through the rings of the catheter, I put the opposite ends of the tape through the lower loops on each side, and then through the middle loops; and after carrying the ends of the tape across each other beneath the penis, and making them pass through the highest loop on each side, I tie them above the penis upon the middle of the truss. By this method the catheter is kept steady, if the patient is moderately cautious. To prevent the extremity of the catheter from catching hold of the patient's clothes, I sometimes apply a bandage over the bag truss and catheter, or fasten a middle strap of such a bandage over the pensory, by which method the catheter is kept quite secure.

I have already mentioned some circumstances, which have a tendency to mislead the medical practitioner, in the treatment of the Disease which I am now considering; and it may be of use to add a few Observations on these sources of deception.

CASE 5.

Case 5. In the early part of my practice, I was attending Mr. HEPWORTH, an elderly man, who laboured under a retention of urine. I had drawn off his water morning and evening for a few days; when I was informed, that he had regained the power of relieving himself. About a pint of urine was shewn to me, as the quantity which he had made in the course of the night with a natural stream. I began to apprehend that my attendance would be no longer necessary: but as he still complained of the same uneasiness in the hypogastrium, I examined the state of the abdomen; and was surprised to find the bladder distended as much as it had usually been before his urine was extracted; and the operation was found to be as necessary as it had been before.

This

CHAP. XII.

This Case taught me the necessity of continuing to introduce the catheter, till it clearly appears, that the patient can empty his bladder by the natural efforts.

Case 5.

CASE 6.

Case 6.

A few years ago I was desired to visit a Patient early in the morning, whom I had repeatedly attended on account of a retention of urine. He complained of considerable pain in the hypogastrium, though he had made two quarts of urine in the course of the night. I found his bladder distended, and drew off about a pint of urine, which he had not been able to expel.

When there has been a necessity for extracting the urine by the catheter during two or three weeks, the power of expelling it voluntarily generally returns by degrees. The propriety of omitting the operation is not to be determined by the quantity of urine which the patient expels, but by the power of emptying the bladder.

Another source of deception is the involuntary discharge of urine, which sometimes succeeds a retention that is not relieved by the

the catheter. This is not so frequent an occurrence as the former; but it is highly dangerous, when the proper means of relief are neglected.

CASE 7.

Case 7. I was desired to visit Mr. LAWN, of Hunslet, near Leeds, an old man, who had laboured under an incontinence of urine about fourteen days. Upon inquiring into the manner in which this disease commenced, I found that it had been preceded by an inability of expelling his urine. This circumstance led me to examine the abdomen; when I found the bladder distended greatly, and giving pain when pressed upon. I extracted the urine by means of the catheter; but notwithstanding the temporary relief which this operation afforded him, he died the following day; though the complaint in his bladder seemed to be the only disease which had affected him.

CASE 8.

Case 8. May 17th, 1798, I visited Mr. B. aged 67 years, who lived about sixteen miles from Leeds, and laboured under an incontinence of urine.

CHAP. XII.

Case 8.

About a fortnight before I saw him, he had been seized with an inability of discharging his urine freely, attended with considerable pain in the hypogastrium. In the course of two or three days he lost entirely the power of expelling his urine by any voluntary efforts; and it began to flow from him involuntarily, and incessantly.

I found him in a very weak state. His tongue was white, and rather dry. His pulse frequent. His thirst considerable. He was restless, being able to get very little sleep; and having a constant uneasiness in the abdomen. The hypogastrium was enlarged, and felt very sore when pressed upon. The bladder was in a distended state, and rose somewhat higher than the navel. The penis was sore, from the constant flow of urine.

I had suspected the nature of his complaint, from an imperfect account which I had received from a friend of the Patient, who came to desire my attendance; and in consequence of this suspicion, I had brought with me a flexible catheter, and a bag-truss.

I immediately extracted his urine, though with some difficulty; and left the catheter in the urethra, secured by means of the bag-truss, in the manner above described.

He

Case 8.

He begged that he might have something to drink which was cooling, as his Surgeon had confined him chiefly to gin and water for beverage, to enable him to expel his urine more freely. I gave him a bason full of milk, which he drank with the greatest pleasure. I wished to have brought him to Leeds with me, but he thought himself unable to bear the journey, and was desirous to remain at home. I advised him to let off the urine every four or five hours.

27th, I visited Mr. B. again, drew out the catheter, and after cleaning it, and removing the calculous matter which adhered to its extremity, I replaced it. He could not yet expel his urine.

A week after this visit Mr. B. was brought to Leeds. I waited a few days after his arrival before I withdrew the catheter; but did not observe any natural efforts which could enable him to expel his urine. On the 11th day after the last introduction, I took out the catheter; the extremity of which, for the space of an inch, was curiously encrusted with white calculous matter.

I now extracted his urine twice a day, withdrawing the catheter after each opera-

 tion.

CHAP. XI. Case 3.

tion. I attended him at seven in the morning, and at nine in the evening, as there was always a more copious secretion of urine in the night-time than in the day. White matter, of a purulent appearance, flowed from the bladder with the last portion of urine.

As his nights were not passed comfortably, and as the painful desire to make water returned sometimes very early in the morning, I gave him for several nights at bed-time a pound with calomel gr. v. and opium gr. [illegible] which procured comfortable rest, and seemed to hasten on the power of expelling his urine.

At the expiration of a week after I had begun to introduce the catheter twice a day, he found a little involuntary discharge of urine in the morning as he lay in bed; and could then expel a small quantity by the natural efforts. At this time he rose to make use of the chamber-pot; but no sooner did he increase his efforts, than the flow of urine ceased. I advised him to lay some [illegible]ces of blanket so as to receive his urine [illegible]n it began to flow involuntarily; and to [illegible] the most gentle efforts as he lay upon his [illegible], when the involuntary discharge ceased.

By

By this method the urine flowed in greater quantity, than by straining over the chamber-pot. CHAP. XII. Case 8.

The purulent appearance of the last portion of urine ceased gradually, after I had begun to extract his urine twice a day; and at the expiration of sixteen days he needed no longer the assistance of the catheter.

CASE 9.

One evening I received a message from a young Gentleman, desiring my attendance upon his Father the next day. The message was accompanied with the following Letter: Case 9.

"My poor Father has been exceeding
"ill for the last fortnight. He was seized
"about that time with considerable pain,
"which Dr. —— and Mr. —— who attend
"him, think proceeded from some disorder
"in the urinary vessels. It was attended
"at first with a suppression of urine, but
"has since changed to an involuntary dis-
"charge, which occasions great pain and
"irritation."

I went over to —— the next day, and took a catheter along with me, apprehending that the disease might prove to be a retention of urine. Soon after my arrival, I examined the

CHAP. XII.

Case 9.

hypogastrium; and found the bladder forming a hard tumour, which extended rather higher than the navel.

I desired that the Surgeon might be sent for immediately, and comforted my Patient with the prospect of speedy relief.

The disease had now subsisted 16 days, and had begun in the following manner: Mr. —— was awaked about two o'clock in the morning, with a painful motion to make water, a complaint to which he was somewhat liable; but at this time he could discharge no urine. He remained in this distressing state for some hours; but in the course of the day (he could not recollect at what hour) the urine began to flow involuntarily. This evacuation, however, afforded him but a small degree of relief. He continued to have a constant uneasiness, attended with great restlessness; so that from the commencement of the attack, his repose seldom continued above an hour at one time. He was feverish. Various remedies had been administered; and before my arrival, the fever had abated in some degree, and the pain was somewhat diminished. His tongue had become clean.

As soon as the Surgeon arrived, the catheter was introduced; and four pints of urine were

were extracted. This was not high coloured, as is generally the case in a complete retention. I attributed its paleness to the constant influx of urine from the kidnies, and the constant flow from the urethra. CHAP. XII. Case 9.

I never knew a patient appear to receive so little relief by the extraction of so large a quantity of urine. He was very weak, and continued to be restless and uneasy.

As this operation did not enable Mr. —— to expel his urine by the natural efforts, it was extracted again the following morning; and then exceeded somewhat four pints in quantity. In the evening of the same day, the urine drawn off was about a pint and half.

On the third day an elastic gum catheter was left in the urethra, and secured by means of a bag-truss.

Four days after I had left my Patient, I received a message, to inform me, that the catheter had slipped out of the urethra. The messenger brought me the following account from the Physician who was attending:

"Some days ago the urine was very fetid, "and alkalescent, and at the bottom there "was a considerable quantity of sanious "mucus, which last has continued to appear,

CHAP. XII. Case 9.

"but the urine diminishes in quantity. Last "night not more than from three to five "ounces was discharged at a time, and that "much loaded with bloody mucus. He has "also complained of smarting and burning, "latterly, when it was drawn off. The pulse "has stood at ninety day after day."

I set off immediately to visit Mr. ——, but before my arrival the Surgeon had replaced the catheter. The urine which was let off after this replacement was not more tinged with blood than it had been the preceding day; but at five in the afternoon, more than half the quantity of fluid which ran through the catheter was pure blood, and coagulated as it flowed. The quantity of blood which flowed at this time was about four ounces. The blood was florid, as if recently extravasated. Upon inquiry, I found that the belt of the bag-truss had been suffered to slide down below the hips, and had consequently drawn out the catheter.

I put on a fresh suspensory; added shoulder-straps to it, and also a broad piece of single calico, which was put on as a ⊤ bandage over all, for the purpose of covering the extremity of the catheter. This additional part was fastened to the belt behind with small buttons,

buttons, and was pinned before; so that it might be readily removed when Mr. —— had occasion to use the night-chair.

Our Patient was evidently sunk with the hæmorrhage. A cold sweat lay upon his arm the remainder of the day; and his pulse was more feeble than usual.

We had directed Mr. —— to abstain from wine, or to take very little, on account of the tender state of the bladder; but the degree of debility, which succeeded the hæmorrhage, induced us to change the plan of diet. We now directed him to drink half a pint of wine in the course of the day, partly old hock, and partly red port. We ordered the following medicines for him:

℞. Decoct. Cort. Per. ℥ vij.
Tinct. ----- simp. ℥ j. misce sumat cochl. iij. sextis horis.

℞. Aq. puræ ʒ x. spt. cinnamomi.
Syr. simp. aā ʒ j. tinct. ferri muriat. gᵗᵃ xx. misce fiat haustus sextis horis sumendus.

These medicines were to be taken alternately every three hours.

The next day Mr. —— seemed much recruited

CHAP. XII. Cont.

recruited by the change of diet, and the medicines. His cold sweats were gone off, and his pulse in the afternoon, when I left him, was at eighty-eight. He was able to walk a little about his room. His urine was highly tinged with blood of a dark colour, but no fresh blood appeared.

Dr. —— informed me by letter, that on the third day after this visit, a separation in the urine appeared, the dark-coloured sediment falling to the bottom. After that day there was no sediment; but the urine continued clear, and without fetor.

At the expiration of a fortnight I paid a third visit to Mr. ——. His urine had still continued clear, but was rather high coloured. Pulse seventy-eight. Tongue clean and moist. Appetite good. Strength increased.

The catheter was removed, that a trial might be made whether our Patient had regained the power of expelling his urine. The inability still remained, and the catheter was replaced.

At the expiration of a week after my last visit, Mr. —— came to Leeds. The retention of urine had now subsisted forty-seven days, during thirty-one of which the catheter had remained in the urethra, except when withdrawn

withdrawn for the purpose of trying our Patient's ability of relieving himself.

CHAP. XII.

Mr. —— was not now so free from inflammatory symptoms as when the catheter was last withdrawn. His urine had a higher colour, and an offensive smell. Some flakes of purulent mucus were discharged along with it; and he felt pain in his bladder when the last portion of urine was flowing through the catheter. I was apprehensive that his diet had been too generous, with the view of increasing his strength.

Case 9.

I tried the effect of extracting his urine every twelve hours, without leaving the instrument in the urethra. But the secretion of urine was usually so copious in the night-time, that he was in a very painful state for some hours before the appointed time arrived for extracting his urine in the morning, notwithstanding he usually took two grains of opium at bed-time. I determined, therefore, to leave the catheter again in the urethra, and try by a strict regimen, and other appropriate means, to remove the inflammatory symptoms which still remained. Mr. —— left off the use of flesh meat and wine; took gentle laxatives occasionally; and drank the lac amygdalæ, with mucilage of gum arabic added.

I removed

CHAP. XII.

Case 9.

I removed the catheter after it had remained about a fortnight in the urethra; and as my Patient could not yet relieve himself, I thought it best to extract his urine every eight hours, (viz. at ten in the evening, at six in the morning, and again at two) to prevent too great an accumulation in the bladder. This method was attended with such success, that at the expiration of a week he began to expel a considerable part of his urine by the natural efforts. I continued to introduce the catheter once or twice a day, for a few days; and then once in two or three days, till I found him capable of emptying the bladder. He had received so much benefit from the opiate, that he continued to take a single grain every night at bed-time.

After remaining two or three weeks longer at Leeds, to try the effect of exercise, and his usual mode of living, he returned home perfectly free from the disorder, which had afflicted him nearly three months, and which had repeatedly been attended with very dangerous symptoms.

REMARKS.

I have related this Case at some length, as it affords much instruction in the management of this important Disease.

1. We

1. We see how soon a complete retention of urine may change to an involuntary discharge, the bladder still remaining in a distended state. I questioned Mr. —— very strictly respecting the time at which the involuntary emission of urine took place; but he could not recollect the hour exactly. The information which I received from those who attended him, led me to conclude, that the total suppression had not continued above twelve hours before the involuntary discharge commenced. This speedy alteration in the appearance of the disease, caused the antecedent suppression to be overlooked; and led to an omission of the appropriate remedy.

2. I have frequently observed, as occurred in this Case, that a copious secretion of urine immediately succeeds the first extraction, when the retention has not been speedily relieved. The quantity of urine extracted after twelve hours, exceeded that which had been drawn off at the first operation by about half a pint. In Mr. M.'s case (Case 4.) the quantity of urine extracted after the short interval of four hours, was nearly equal to that which had been previously extracted after a complete retention had subsisted for three days.

3. In

CHAP. XII.

Remarks on Case 9.

3. In extracting the urine regularly night and morning, with the exact interval of twelve hours, I have often observed, that the quantity of urine secreted in the night, has exceeded that secreted in the day. This occurred in an unusual degree in the present Case. The quantity of urine drawn off in the evening seldom amounted to a pint, and sometimes did not exceed half a pint; while the secretion in the night-time was often more than two quarts. Nay, it happened sometimes, that Mr. —— discharged three or four pints in the violent strainings which accompanied this abundant nocturnal secretion, while a painful retention continued, so that I drew off an additional pint in the morning.

4. This Case shews, as clearly as a single one can shew, that a patient sooner regains the power of emptying his bladder by the natural efforts, when the catheter is withdrawn after each extraction, than when it is suffered to remain constantly in the urethra.

It is sometimes impossible, from various causes, to make a catheter pass through the urethra. The puncture of the bladder then becomes necessary, if the retention of urine continues. This operation may be performed,

either above the pubis, or through the rectum. I have seen it performed in both these methods; but give the preference to the latter. It is more easy to the surgeon; and less painful to the patient. POUTEAU's curved trocar is a very convenient instrument; and may be used with safety, for puncturing the bladder through the rectum: but the operator should cautiously avoid wounding an artery, which may be felt running towards the anus, where the bladder is most protuberant. The finger, which is introduced into the rectum to guide the trocar, may be conveniently placed a little on either side of this vessel. It is not always necessary to leave the canula in the bladder, as the urine sometimes begins to flow through the penis within a few hours after the bladder is emptied. Perhaps this event may be the most frequent, when the introduction of the catheter has been prevented by a stricture in the urethra. If the wound becomes closed before the power of expelling the urine is regained, recourse must be had to a repetition of the operation, which gives very little trouble to the patient: neither is he much incommoded by suffering the canula to remain two or three days in the bladder. This is sometimes necessary, and seldom improper.

CHAP. XII.

Case 10.

CASE 10.

Sept. 3d. 1807, VALENTINE PRENDERGAST, a middle-aged man, was admitted into the Leeds Infirmary, for a retention of urine. He had experienced some difficulty in making water during the last twelve months, and the urine had flowed in a small stream; but he had always been able to assist himself till this morning. The retention was now complete. Being unable to introduce either a catheter or bougie into the bladder, I determined, in the evening, to puncture the bladder through the rectum. When my finger was introduced, he felt a strong motion for a stool; and upon withdrawing my finger, he had an evacuation of liquid fæces, and voided some urine, by a stream through the penis. On this account I deferred the operation, and ordered him a bolus with calomel gr. x. and opium gr. ij. to be taken at bed-time.

4th. He made a little urine: but his bladder remained hard and distended. Pulse calm. Gave the calomel and opium twice in the course of the day: and during the night he took four grains of opium alone, divided into four doses.

5th. In the same state. A catgut bougie seemed

seemed to pass at one time into the bladder, but afforded no relief. In the evening I punctured the bladder; and withdrew the canula as soon as the urine (in quantity two pints) was evacuated.

6th. The wound in the bladder was completely healed; nor could I find the orifice, by pressing the point of a catheter against that part of the rectum which I had punctured. No urine had flowed through the anus after the canula was withdrawn. He could expel a portion of his urine through the urethra; but could not empty the bladder.

7th and 8th. Continued in the same state. Pulse calm; generally betwixt 60 and 70, never exceeding 80.

9th. He had made three pints of urine during the last twelve hours; and in the course of this day he discharged an equal quantity; yet the size of the bladder was not diminished. I thought it improper to suffer the bladder to remain in this distended state; and, therefore, repeated the operation, and drew off by the canula a quart of urine.

The canula was now left in the bladder, secured by a proper bandage.

10th. Pulse continued calm. I allowed the

CHAP. XII.

Case 10.

the instrument the proper curvature, without the pressure of a finger introduced within the rectum.

I cannot conclude these Observations, without urging the propriety of an early introduction of the catheter in this disease. Delay is not only fruitless, in general; but also renders the operation more dangerous, as well as more difficult; and usually protracts the completion of the cure. Besides, the great degree of inflammation which the bladder suffers, when the extraction of the urine is long delayed, brings on sometimes a suppuration in the part. I have seen many instances of this. The retention has indeed been cured, but a discharge of purulent matter has succeeded; and the patient has died tabid. If the circumstances of the case require bleeding, purging, the injection of a clyster, or the use of a warm bath; a delay for these purposes may be beneficial: but delay should only be considered as preparatory to a more safe introduction of the catheter.

To face Page 487.

PL

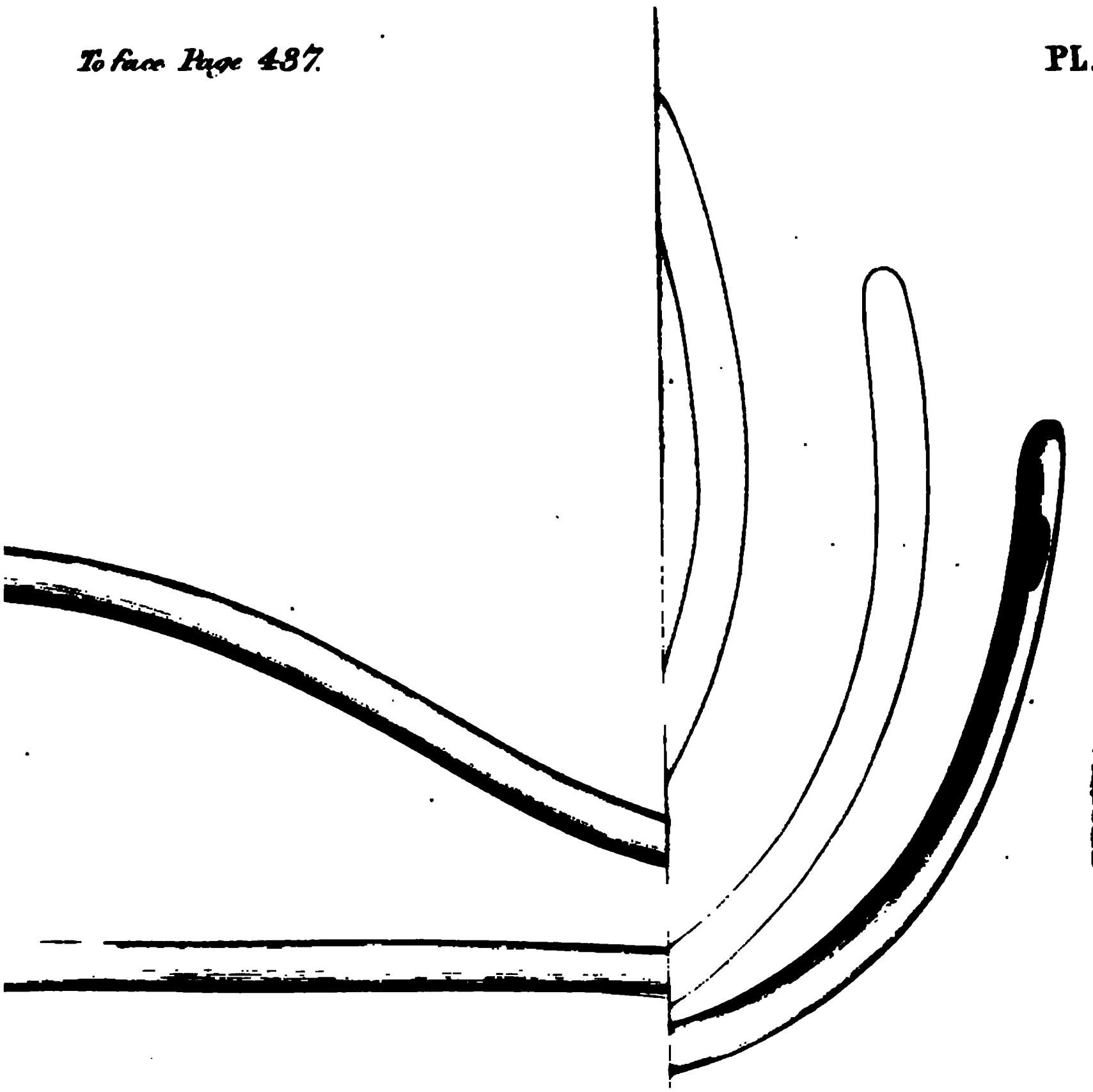


PLATE 11.

Fig. 1. represents the exact form of an old flexible CATHETER, which had lain a considerable time in the urethra of a male patient. I have observed the same form in other catheters, which had been suffered to remain in the urethra, and which had firmness enough to retain that degree of curvature which they had acquired in the uretha.

Fig. 2. shews the effect which is produced in a Catheter by withdrawing the Stilet, if it is sufficiently firm. The Figure in Outlines, which is nearest to that of the inferior Catheter, was taken when the Stilet had been withdrawn about half an inch.

CHAP. XIII.

On the Cure of the Procidentia Ani in Adults.

Case 1.

CHAP. XIII. Case 1.

IN autumn, 1788, Mr. W. of Hull, consulted me on account of a complete and most troublesome *procidentia ani*, which came on whenever he had a stool, and continued for some hours; the gut gradually retiring, and at last disappearing, until he had occasion to go again to the vault. The returns of this disease were invariable, and so distressing, when they happened in the daytime, that he had brought himself into the habit of having a stool every other evening, a little before bed-time. After each stool he used to place himself in a chair, and make a gentle pressure upon the prolapsed part, which afforded him a little relief: he then lay down in bed; and, the intestine by degrees regaining its natural situation, he found himself in the morning free from the prolapsus. While the intestine remained prolapsed, there

was

was a copious discharge, from the part, of a serous and mucous fluid mixed with blood. CHAP. XIII.

Although he had no pain, nor other inconvenience, during the intervals of these attacks, yet the *anus* did not return to its natural state. It was constantly surrounded by a thin pendulous flap, which was formed by the integuments, and hung down to the extent of three-fourths of an inch in general. The *anus* was also surrounded with several soft tubercles of a bluish colour, which were situated at the basis and interior part of the pendulous flap. These tubercles had the same appearance as those which often remain in persons who have been frequently afflicted with the external piles; and were evidently formed by the extremity of the *rectum*. Case 1.

Mr. W. gave me the history of his disorder; which he afterwards wrote down, as follows:

"When I was seven or eight years old, "I remember to have suffered much pain by "the bowel coming down after a stool; but "I think this complaint did not continue long "with me. From that age till about twenty-"two, I enjoyed an excellent state of health, "and had no appearance of any complaint in "the *anus*; only I remember that I used

CHAP. XIII. Case 1.

" often to feel an inclination to sit pretty
" long at the vault, which I indulged probably
" too much.

" About the age of twenty-two, on going to
" the vault, I for the first time perceived that
" I had voided a good deal of clear blood;
" but do not remember that I had any pain
" at that time. After this I was often, if not
" generally, troubled with a little discharge
" from the *anus*, which was usually of blood.
" I commonly perceived some heat and un-
" easiness after a stool, and these gradually
" increased, together with a small protu-
" berance on the edge of the *anus*; which
" last, I think, I did not perceive till some
" weeks, perhaps months, after the first dis-
" charge of blood. The discharge after stool
" increased by degrees, so that in twelve or
" eighteen months after the first attack I was
" obliged to apply linen cloths to the part
" affected.

" I was now constrained to mention my
" disorder, and various applications were
" made use of for my relief, as the powder
" of nut galls mixed with hog's lard, elder
" ointment, and a solution of Roman vitriol,
" but without effect. Opening electuaries,
" sulphur, &c. were prescribed for me, but

" to

" to as little purpose, the disorder still in-
" creasing. After about two years, I seldom
" parted with a stool in less time than twenty
" or thirty minutes; and often voided a good
" deal of blood. Thus I continued for several
" years, the pain after each stool, and the
" protuberances gradually increasing, as did
" also the discharge of blood and mucus.

" After enduring this complaint seven or
" eight years, I applied to Mr. SHARP, an
" eminent surgeon in London, who gave me
" an ointment to apply after each stool, some
" soapy pills to take, and recommended the
" use of a clyster a little before going to tool;
" but this last I could never effect, though it
" was that from which he seemed to expect
" the most benefit.

" For many years past I have seldom had
" a stool oftener than every other day, and
" *always* with great pain after it. For two
" or three years past the pain has seldom
" subsided in less time than from four to six
" hours. In the intervals I have been able
" to walk or ride on horseback with ease:
" and I have in other respects enjoyed a
" good state of health, excepting sometimes
" a depression of spirits, and more nervous
" feelings than formerly. My legs have
" occasionally

CHAP. XIII.

Case 1.

" occasionally small scarlet spots upon them,
" and are sometimes swelled about the ancles.

" I think it is now about fifteen years
" since the first attack of bleeding. I cannot
" say how long the gut has been in the habit
" of coming down; but I think it did not
" come down much, if at all, when I consulted
" Mr. SHARP seven years ago; tho' the pain
" was then quite similar to what it has been
" since, only it did not continue so long."

I recommended a trial of the following lotion, for washing the part affected during the state of prolapsus; and I also advised him to keep it applied to the *anus* in the intervals, by means of a thick compress supported by the T bandage.

℞. Aq. Calcis simp. ℔ ij.
Cort. Quercûs contus. ʒ iv.
f. Infusum per hebdomadam, et colaturæ adde
Spt. Vini rect. ʒ iv. f. lotio.

He thought himself for a time somewhat relieved by the application: but further trial shewed, that the relief obtained was inconsiderable; and that the disease was too obstinate to be cured by such treatment.

To obviate the bad effects which arose from the long continuance of the *prolapsus* after

after each stool, I tried to reduce the intestine soon after it came down; but the attempt gave him much pain, and afforded no relief. I was satisfied upon the trial, that the reduction was impracticable.

Although the prolapsed part of the intestine consisted of the whole inferior extremity of the rectum, and was of considerable bulk; yet the impediment to reduction did not arise from the stricture of the *sphincter ani*; for I could introduce my finger with ease during the *procidentia*: but it seemed to arise from the relaxed state of the lowest part of the intestine, and of the cellular membrane which connects it with the circumjacent parts.

My attempt proved vain as to its immediate object, yet it suggested an idea which led to a perfect cure of this obstinate disorder.

The relaxed state of the part which came down at every evacuation, and the want of sufficient stricture in the *sphincter ani*, satisfied me, that it was impossible to afford any effectual relief to my Patient, unless I could bring about a more firm adhesion to the surrounding cellular membrane, and increase the proper action of the sphincter. Nothing seemed to me so likely to effect these purposes, as the removal of the pendulous flap,

and

[illegible] which surrounded [illegible] the inflammation, [illegible] would produce a [illegible] to the sur- [illegible] and I could not [illegible] would bring [illegible] *sphincter ani*. [illegible] and he [illegible] operation [illegible]

[illegible] a gentle [illegible] pen- [illegible] and the most [illegible] which [illegible] Very [illegible]

[illegible] but an [illegible] day, [illegible] appear [illegible] this [illegible] retired [illegible] event, [illegible] quantity, [illegible] to [illegible] applying [illegible] try to [illegible] the [illegible] al.

However.

However, the prolapsus continued so long, that the appearance of the part began to alter; and I saw it would be hazardous to permit the rectum to remain any longer in this situation.

16th. This day at noon I made an attempt to reduce the intestine, and succeeded with the greatest ease. After the reduction Mr. W. complained of so much pain in the *hypogastrium*, that in the evening I thought it proper to bleed him, and to purge him gently with the ol. ricini.

These means afforded the desired relief, and the succeeding evacuations by stool did not again bring down any part of the rectum. But, as some pain in the lower belly succeeded the evacuations, I thought proper to restrain this by giving an opiate. I directed a mild and slender diet, the drinking of linseed tea, lac amygdalæ, &c. gave a little ol. ricini every morning, or every other morning, and gave an opiate after a stool had been procured. By proceeding in this manner for some days, regular stools were procured without any permanent inconvenience. My Patient recovered very well, and was freed from this distressing complaint, which had afflicted him so many years.

In

In March, 1789, I received a letter from Mr. W. of which the following is an extract:

"Dear Sir,—Agreeable to your kind [illegible] you how I go [illegible] have been very [illegible] having generally had [illegible] that I have seldom had [illegible] castor oil. I apprehend [illegible] the same as before the [illegible] only that I conceive [illegible] occasioned by the operation. [illegible] that is natural: but I find [illegible] from that, as I [illegible] costiveness. In one instance [illegible] somewhat different from [illegible] immediately after an eva- [illegible] (as I conceive) [illegible] that contraction [illegible] ever per- [illegible] I never bleed [illegible] symptoms of my [illegible] to be ever [illegible] is a blessing [illegible]"

[illegible] of a visit [illegible] me, that he [illegible] very small [illegible] protuberance

protuberance at the anus, not longer than an eighth, or at the most a quarter, of an inch, when he went to stool; especially if he strained more than usual. But this went away immediately after the evacuation, and gave him no trouble. CHAP. XIII. Case 1.

CASE 2.

Mr. K. of Wetherby, consulted me in October 1790, on account of a troublesome *procidentia ani*, attended with frequent bleeding, and with the external piles. He had been subject to discharges of blood, at times, upon going to stool, for twenty years. The piles had frequently burst, and then becoming flaccid they grew easy, and he felt no inconvenience from them for a time. During the last two years they had continued to increase in size, and had not burst as usual. They were become so troublesome, that he could neither ride nor walk with ease. Case 2.

I found several soft tubercles situated at the verge of the anus. Those which were the most prominent were situated on one side of the anus; on the opposite side there were none very prominent.

I recommended an operation similar to that which I had performed in Mr. W.'s

Case;

CHAP. XIII.

Case 2. Case; and with the consent of my Patient I extirpated the larger tubercles on one side of the anus.

The part was healed at the end of three weeks, and Mr. K. returned home much relieved. He favoured me with an account of his state in June 1791, and again in September 1792. In these letters, he informed me, that the operation had answered his expectation, so that he could ride or walk without the least inconvenience. However, the small tubercles which were left had rather increased in size, and sometimes discharged blood. The part on which the operation had been performed remained smooth; but was not free from occasional discharges of blood.

He continued to have a slight degree of prolapsus upon going to stool; but even when the fæces were hard the gut ascended speedily, and without assistance.

He concludes his last letter by saying, "I am well satisfied with the operation."

CASE 3.

Case 3. January 28th, 1791, Mr. E. of T. consulted me on account of a disorder which he called the bleeding piles, and gave me the following relation of his Case.

For

For three or four years he had been subject to bleed at the anus upon going to stool; at which time he felt an unusual pressing downwards. But it was not till within the last five or six months that he was conscious of any descent of the gut: during which time it had descended always when he went to the vault, and he seldom failed on that occasion to bleed considerably. The blood flowed from him in a stream; and the hæmorrhage had increased to such a degree, that according to his own estimate, he had of late lost near a pint of blood at a time. Of this, however, he could not be certain; as he never made use of a close-stool. He could generally reduce the prolapsed part by gentle long continued pressure; but sometimes it remained down for twenty-four hours, during which time he had a copious discharge of bloody serum.

He usually had a stool every second or third day.

These frequent and large bleedings had reduced him, and made him weak; yet his pulse was not frequent, nor very feeble. He had consulted a Physician and Surgeon in the neighbourhood; but, as the latter informed me, no examination had been made of the

CHAP. XIII. Case 3.

parts affected. When I visited him this day at T. I examined the state of the anus, and found no protrusion of the interior parts; but there was a pendulous flap of integuments, about three-fourths of an inch in length, which in part surrounded the anus. As he had no stool while I remained at his house, though I staid all night there, I could form no judgment of the prolapsus but from his own account.

I advised him to inject every other day a mild clyster, made with a pint of water-gruel and a large spoonful of treacle; and to take in the morning, a few hours before the injection of the clyster, a desert spoonful of castor oil. I cautioned him against sitting long at the vault, or using any straining efforts. I informed him that the prolapsed intestine would produce a sensation as if he had not discharged all the faeces: and begged that he would be particularly aware of this deception, lest he should increase the hæmorrhage by unnecessary strainings. I advised him to wash the prolapsed part with the astringent lotion which I had recommended to Mr. W. (Case 1.) and, until that could be prepared, to make use of brandy in the same way. And I recommended to him to reduce the intestine immediately

diately after the washing, which was to be used as soon as the fæces were discharged; that, if the hæmorrhage should return, it might be suppressed as soon as possible.

This method of treatment prevented the return of the hæmorrhage, but did not cure the prolapsus. Mr. E. afterwards informed me, that he thought he had greater difficulty in reducing the prolapsed intestine after he had used the astringent lotion for a week or two.

Finding the complaint at a stand, he came to Leeds on March 14th, that he might be more immediately under my care. He then complained of constant uneasiness at the anus: and, upon examination, I found engaged within the sphincter ani a small portion of intestine, the extremity of which was visible externally, and had a livid hue.—I was of opinion, from the account which he gave me, that this part had remained prolapsed during the last six or seven days.—I informed him of his situation, and advised him to reduce the part immediately. His bowels were kept open; and he was enjoined to abstain from exercise until this part should have regained its natural state.

At the expiration of a week I carefully

CHAP. XIII. Case 3.

examined the affected parts, after he had walked awhile abroad, and found a small portion of the intestine adhering in one part to the sphincter ani. This adhering portion I extirpated with a pair of scissars; hoping that the removal of it might allow the rectum to retire into its natural position, and perhaps might prevent the *procidentia*. At any rate I thought it right to use first a method more gentle than one which I had in view, and which I reserved to the time of necessity.

This treatment afforded no relief; but the intestine descended as usual when the Patient went to stool. I now determined upon using the method which had succeeded so well in the two preceding Cases.

Friday, April 8th, after having informed my Patient of the nature and necessity of the operation which I proposed for his relief, and encouraged him with the hope of a favourable termination; I removed the pendulous flap close to the anus; and cut off about a quarter of an inch of the interior red lining of the sphincter ani, formed by the extremity of the intestine, which was rather loose, and projected a little. A small artery was opened on the left side, which bled freely for a short time; but, as the extremity of it lay loose without

without any immediate connexion with the cellular membrane, and as it soon ceased to bleed, I did not apply a ligature.

About an hour after the operation, I was sent for in haste, and found the wounded parts bleeding freely. I was obliged to take up, with a needle, a blood-vessel on each side of the anus. The application of the ligature was attended with considerable difficulty, and could not be effected until an assistant had separated the wounded parts as much as possible.

Sunday, 10th. Mr. E. took a table-spoonful of *ol. ricini*, and had a stool, without either hæmorrhage or descent of the intestine.

Tuesday, 12th, he took another dose of the oil, and had three stools in the course of the day. At the third stool, which was attended with unusual irritation, the *procidentia ani* returned. I was not informed of this event till Wednesday morning, when I effected the reduction of the intestine without difficulty.

Wednesday noon I found the gut in its prolapsed state again, and was informed that it had come down almost immediately after I had left my Patient in the morning. Mr. E. had also reduced it, but without any permanent good effect. The parts were now very

CHAP. XIII.

Case 3.

sore, and the intestine had begun to change colour. I gave him tinct. opii g^{tt} xx. to remove the uneasiness, which was constant; and advised the application of a poultice of milk and bread, to abate the soreness.

I found him much easier in the evening, but the gut was in the same state. I thought it better to try the effect of cold applications, than to repeat the handling of the parts; and desired him to keep cloths dipped in cold water constantly applied, and to change them frequently.

Thursday, 14th. He had had much headach in the night, and had been restless; yet his pulse remained calm, and he had very little uneasiness at the anus. The gut was in the same state. He had used the cold wet cloths in the evening for two hours, but without the desired effect. I again replaced the prolapsed part of the intestine, which was about the size of a large nutmeg; and held the part in its natural situation for a minute or two.

In the afternoon I repeated my visit, and had the satisfaction to find that the natural contractile power of the intestine had effected what I had attempted in vain. The gut had descended soon after I left him in the

the morning, as my Patient thought, but had afterwards retired spontaneously, after having been down, in general, for forty-eight hours. CHAP. XIII. Case 3.

After this time the *procidentia ani* returned no more; but the cure proceeded as well as I could wish. I directed a laxative clyster every other day, to procure an easy motion; but did not permit Mr. E. to take the castor oil, or any other purgative, until the parts were healed. He was perfectly well at the expiration of three weeks after the last operation.

CASE 4.

The following Case is so well described by the Lady who was the subject of it, and who wrote it down at my request after her recovery, that I have nothing to add but an account of the means used for her cure. Case

" Dear Sir,

" IF I could have the most distant hope, " that a statement of my Case would be of " use to any of my fellow creatures, it would " be a great gratification. The consideration " that it is possible you may have a similar " Case, is a great inducement to me to make

CHAP. XIII.

Case 4.

" an attempt to describe my truly distressing " situation, though I am sensible I am very " unequal to the undertaking.

" It is more than twenty years since my " complaint first made its appearance. At " first a small part of the seat came down " when I had an evacuation, but when re- " turned gave me little pain or inconvenience. " It continued in this state some years. Af- " terwards the part became more relaxed, " and frequently came down when I walked, " or stood, particularly in warm weather. " After I had continued in this situation some " time, the part became very sore, and came " down in a much greater degree, and I had " very frequent bleedings, and during the " discharges I was generally reduced very " low and weak. Sometimes I have been a " month or six weeks without any returns " of the bleeding.

" In October last the soreness and bleeding " came on in so terrible a manner, I was re- " duced to the greatest distress and weakness. " I daily lost six or eight ounces of blood " when I had an evacuation, and the pain " would continue many hours so violent, I was " under the necessity to press upon the part, " which was the only relief I had.

" In

" In January (1799) I came to Leeds. " It is unnecessary to say what was done " there."

The Lady was at this time much reduced by the frequent and copious hæmorrhages from the rectum. I found, upon examination, a soft tubercle on two opposite sides of the anus, which did not retire along with the prolapsed parts of the rectum. These I extirpated, but at different times, wishing to try whether the removal of one of them might not bring on a sufficient stricture, upon healing, to support the extremity of the rectum. The good effects produced by these operations are described in the subsequent part of her letter; in the transcript of which I shall omit one sentence, as it only contains the effusion of kind partiality.

" I am now, by the blessing of God, and " the means used, wonderfully restored. I " can now walk as far as my strength will " allow, without any inconvenience from my " old complaint, though it yet comes down " in a small degree when I have an evacua- " tion, but never at any other time. I have " had no return of the bleeding, or soreness, " and at present I am very comfortable, and

" I have

CHAP. XIII.

"I have every reason to hope I shall con-
"tinue so. - - - - - - - -

Case 4.

"I did not think I was within the reach
"of human aid. I have only to regret that
"I did not apply sooner, as my constitution
"would not have received so severe a shock,
"as I am sensible it has done, from the long
"continuance of my complaint. I am yet
"weak and low, and I have not the perfect
"use of my legs; but I am happy to say
"I recover daily, and I trust I am again to
"know the blessing of health.

"I am, &c.

"June 26th, 1799. "J. T."

TUMOUR IN THE RECTUM.

CASE 5.

Case 5. In October, 1764, I was consulted by WILLIAM HARGRAVE, of Bramley, near Leeds, on account of his Son, about eighteen years of age, who had had for two years a tumour in the rectum, which was protruded without the anus, whenever he had a stool, and generally discharged blood at those times. This complaint had been attended from its beginning

beginning with pain in the lumbar region, which commenced upon his receiving a blow on that part as he was stooping. He had never been healthy since this accident. His appetite was great, but he was soon faint after eating. He was extenuated, and had lost much of his strength.

I desired the young Man to sit down upon a close-stool, containing a little warm water, and to use such efforts as he knew would bring the tumour into view. I found it to be about the size of a nutmeg, adhering to the intestine by a narrow basis. In its appearance it resembled a large pile; but was of a firmer texture than the piles usually are, unless when inflamed.

I recommended the extirpation of this tumour; but did not think excision to be advisable, as it would have been very difficult to restrain a hæmorrhage in a part of the intestine so distant from the anus, as that occupied by the basis of this tumour. I therefore made a ligature round the basis, and then pushed up the tumour into its place above the sphincter ani. On the third day I found the tumour much shrivelled, and applied a second ligature. Neither of these operations gave my Patient any considerable pain.

CHAP. XIII. Case 5.

On the 5th, the Father of the young Man informed me, that the ligatures had come away without his Son's knowledge, who was now quite easy.

The hæmorrhage returned no more after the extirpation of the tumour, and the young Man soon regained his perfect health.

CHAP. XIV.

On the Cancer of the Penis.

CASE 1.

William Bromitt was admitted into the General Infirmary at Leeds in 1774, for a cancer of the penis. He had from his infancy been subject to a natural *phymosis*, so that he had never been able to draw back the prepuce. The disease began by a painful swelling of the extremity of the penis; on which account the prepuce had been divided in three places by a French Surgeon, who then practised at Wakefield *.

From the time that these incisions were made, a large irregular fungus had sprouted out from the extremity of the penis, which continued spreading, till it had occupied all that part of the penis which naturally projects beyond the scrotum. Neither the prepuce nor the glans penis could now be distinctly

* This account I received from the Patient, who, not being able to denude the glans penis, might not know whether the disease originated in the prepuce or in the glans.

CHAP. XIV. Case 1.

distinctly perceived; but the whole projecting part of the penis formed a confused mass of irregularly granulated flesh, which discharged a very fetid matter. That part of the penis which was covered by the scrotum and perinæum appeared to be sound, being free from any morbid hardness. I extirpated the penis close to the upper part of the scrotum. One artery on the dorsum penis, and one in each corpus cavernosum, bled freely; so that I was obliged to apply a ligature to each vessel.

I apprehended that it might be of service to my Patient, in this case, if the extremity of the urethra was suffered to contract itself; as the urine would then be projected to a greater distance, and would not be so apt to run down the scrotum. I therefore omitted the introduction of a bougie, till he began to complain that he could not make water without some difficulty. I now found that I had too long deferred the introduction of a bougie, as the urethra would scarcely admit a very small one. I directed that a small bougie, about an inch in length, should be retained in the urethra. But, about twelve hours after its introduction, the Patient was seized with a shivering, succeeded

by feverishness. The bougie was then withdrawn, and a cooling laxative was administered. The complaint went off in a few days, though not without a small discharge of purulent matter from the urethra. He made water with less difficulty afterwards. CHAP. XIV. Case 1.

He was discharged, cured, a month after the operation. The urine flowed in a small stream when he made water; but it was projected to a considerable distance from the penis, when he drew up the integuments covering the pubes.

About a month after his discharge from the Infirmary he applied to me, requesting that I would introduce the bougie, as the urethra had again become more contracted. The introduction did not give him pain, but brought on a feverishness, as it had done before.

I advised him to continue the occasional introduction of a short bougie.

I saw this Patient some years afterwards; and he had then suffered no return of the cancerous complaint.

CASE 2.

In the spring, 1779, Mr. M. of N. W. consulted me on account of a cancerous excrescence, which occupied the whole of the Case 2.

glans

CHAP. XIV.

Case 2.

glans penis, and a part of the corpora cavernosa. The disorder had appeared about a year before, and had commenced by a discharge of purulent matter from the extremity of the prepuce. He had a natural *phymosis*, so that the state of the glans penis at that time could not be seen. His complaint was treated as venereal by the Surgeon whom he first consulted. Finding no relief, after a trial of some months, he consulted another Surgeon, who divided the prepuce, and attempted to bring on a salivation. A considerable degree of inflammation was the consequence of this treatment; and a third Surgeon was consulted: who, after removing the inflammation by emollient applications, tried to bring on a healing of the sore by digestives and gentle escharotics. The complaint being rendered rather worse by these applications, he desisted; and treated the disorder as cancerous, by applying the cicuta externally, and giving it internally in large doses joined with the bark. The Patient received no benefit from these remedies. He had been much reduced, as he informed me, during the treatment with mercurials; but had regained his flesh when he came to Leeds, and had a good countenance.

There

There was a part of the penis between the cancerous excrescence and the pubes, which appeared to be in a sound state. The rest of the corpus cavernosum and urethra was also free from induration.

So far the case seemed proper for amputation. But there was a hard tumour, about the size of a horse-bean, in the integuments covering the ossa pubis, which made me fear a return of the complaint. However, as there was not the least hope of a recovery by any other means, and as the small tumour admitted of extirpation, at the request of my Patient I performed the operation; and extirpated this tumour, as well as the diseased part of the penis.

I rolled a piece of tape round the sound part of the penis; which enabled me to extirpate with more precision just so much of the integuments, and body of the penis, as I wished to remove. I cut off, not only the excrescence, but also all that part of the penis which was covered with discoloured integuments. The hæmorrhage was considerable; the blood not only flowing from many conspicuous arteries, but oozing largely from the divided corpora cavernosa. I took up one artery in the dorsum penis, and one in each

CHAP. XIV. Case 2.

corpus cavernosum. The bleeding, which still continued, seemed then to be a general oozing from the wound: on which account I applied the sponge in the manner recommended by Mr. WHITE.

About an hour after Mr. M. had been put to bed, the bleeding became considerable again; and I was obliged to remove the dressings, and to take up three other arteries. A fourth vessel, which seemed to run in the septum of the corpora cavernosa close to the urethra, bled a little; but, as I could not discover clearly its extremity, I contented myself with applying a piece of sponge to the part whence the blood issued.

On the third day after the operation, a fresh haemorrhage came on, which compelled me to remove the piece of sponge that I had applied, and which now adhered closely to the wound. The haemorrhage arose from that part of the septum which I had before seen bleeding, but which now bled freely.

The parts proceeded very well; except that the wound in the pubes, made by the extirpation of the small hard tumour above mentioned, remained in a foul state. The application of the *pulvis angelicus** brought the

* Hydrarg. nitrico oxyd.—Alumin. ust. aa. p. æq.

the sore into a clean state; and it afterwards healed. CHAP. XIV.

I made use of a bougie occasionally, though the extremity of the divided urethra did not contract so much as in BROMITT's Case. Case 2.

Though the excision was made at such a distance from the pubes, as to permit me to apply a piece of tape, three quarter of an inch in breadth, round the sound part of the penis; yet immediately after the operation the penis became retracted within the scrotum; and a hollow, instead of a projection, remained after the cicatrization of the wound.

Mr. M. was under the necessity of using bougies occasionally after his return home; but I never heard that he had any return of the cancorous disorder.

CASE 3.

In July 1781, T. M. Esq. of A. consulted me on account of an excrescence within the prepuce, which he had discovered a few months before. It was hard, and had an uneven surface. It was attached both to the prepuce and glans penis. I could see a part of it, though he could not denude the glans, Case 3.

having

CHAP. XIV. Case 3.

having had from his infancy a natural *phimosis*. A large quantity of fetid ichor was discharged from the diseased part.

I could not doubt that the complaint was of a cancerous nature, and therefore I advised extirpation as the only method of cure which was likely to prove effectual.

This Gentleman was in the sixty-third year of his age, and seemed to have a good constitution. He was subject to discharge small sand in his urine; and had sometimes slight attacks of the gout.

I performed the operation in August. The arteries which ran in the centre of the corpora cavernosa penis gave me no trouble. But I was obliged to take up four which ran upon the dorsum penis.

I made an attempt to heal the wound by the first intention; and, for that purpose, I brought the integuments over the divided corpora cavernosa, securing them, as well as I could, with court-plaster. That I might make the integuments lie upon the wounded extremity of the penis without puckering, I made a longitudinal division of them at the inferior part of the penis; by which method I could cover the corpora cavernosa without covering the urethra. I introduced a small

silver canula into the urethra; that the integuments might not slide over the extremity of that canal, and that the least possible disturbance might be given to the parts in his efforts to make water.

Whenever my Patient made any exertion, the blood gushed out from the corpora cavernosa; but there was no bleeding while he lay still in bed. I directed an assistant to place his fingers upon the extremity of the corpora cavernosa whenever Mr. M. had occasion to make water, or to use any other exertion. This attention was necessary during two or three days after the operation; at the end of which time the oozing of blood ceased.

I was disappointed in my design of healing by the first intention; for the integuments would not adhere to the extremity of the corpora cavernosa. These spongy bodies, when divided, do not readily throw out granulations; but have usually for some time an ill-conditioned appearance.

I removed the canula, and dressed the wounded parts with digestive; covering the whole with a soft pledget of cerate, and introducing a short bougie daily, as the urethra shewed a great tendency to contract itself.

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effect; but the induration of the inguinal glands remained. CHAP. XIV.

A consultation of the Surgeons of the Infirmary was held upon the case of this poor Man. As we had no hope of curing this ulcerated cancer by any remedies yet known; as the penis, betwixt the excrescences and the pubes, appeared to be in a sound state; and as the inguinal glands had not become enlarged until the application of the escharotics; we judged it proper to propose the amputation of the diseased part to our Patient. Case 4.

I performed the operation September 5th, and was obliged to take up six arteries between the integuments and the corpora cavernosa. The artery, which runs in the centre of each corpus cavernosum, did not require a ligature.

I was obliged to make frequent use of a short and thick bougie during the cure. Whenever this was omitted, the Man found a difficulty in making water. The wound was cicatrized in the space of five weeks.

I gave him the extractum cicutæ for some time after the wound was healed. The enlargement of the inguinal glands gradually lessened for a time; but afterwards increased considerably. The Man became weak and

CHAP. XIV. Case 4.

languishing, and died from a return of the complaint; though there was never any fresh ulceration.

CASE 5.

Case 5.

In 1801, J. L. of Leeds, an elderly Man, consulted me on account of some excrescences on the extremity of the penis. They were evidently of a cancerous nature, and appeared to be confined to the prepuce, the greater part of which was in a morbid state. He did not remember ever to have been able to denude the glans penis. He readily submitted to the operation which I judged necessary to effect the cure of his disorder. My design was to have removed those parts only of the prepuce which had a morbid appearance; but upon attempting this, I found that a part of the prepuce adhered to the corona glandis, and had brought it into a state of ulceration. I thought it necessary therefore to extirpate the extremity of the penis as well as the prepuce, the internal membrane of which was in a much more rigid state than is natural. I was obliged to take up several arteries. A bougie was frequently introduced into the urethra during the cicatrization of the wound.

CASE 6.

Case 6.

Mr. H. of Tanfield, near Masham, consulted me at Leeds, in July 1801, on account of some painful ulcerated excrescences at the extremity of the penis, and gave me the following relation of the origin and progress of his complaint.

He had a natural *phimosis*, having never been able to denude the glans penis. About two years and a half before he consulted me, he began to find great difficulty in making water. At this time there was no appearance of disease in the penis; at least, none had been discovered; but the dysury was attributed to the gravel.

After some time, one of the medical Gentlemen whom he consulted, found, upon examining the penis, that the prepuce was in a diseased state; and made a division of it on one side, which greatly relieved the dysury. Some excrescences were now discovered, arising from the interior surface of the prepuce, and these continued to increase in size and soreness from the time of their discovery.

These excrescences appeared to me to be of a cancerous nature. They were in a

sordid

CHAP. XIV.

Case 6.

sordid state, and occupied the inferior and lateral parts of the prepuce. The superior part of the prepuce appeared free from cancerous affection, the extent of which could not, however, be clearly ascertained, as the glans penis could not yet be completely denuded. I divided the prepuce in a part which was sound, and at some distance from the former division which was incomplete, that I might see whether the glans remained in a sound state. Upon drawing back the prepuce completely, I could perceive no disease in the glans; but the frænum was ulcerated. I extirpated all the diseased part of the prepuce, leaving only that sound part which remained between the two divisions. The frænum was also removed.

The wound put on a favourable aspect, and healed speedily, so that it was nearly cicatrized at the expiration of a fortnight after the excision.

March 23d, 1802. This Patient lately informed me, that he had continued perfectly well since his return home.

CASE 7.

Case 7. A young Man, by trade a shoemaker, consulted me on account of a great difficulty in making

making water, which was attended with some pain at the extremity of the penis.

Case 7.

Upon examination I found the prepuce so much contracted, that it would scarcely suffer the urine to flow out. When I introduced a probe within the prepuce for the purpose of examining its state, I found it to have an unnatural rigidity. The *phimosis* I apprehended to be congenital, as the Patient did not remember to have been able at any time to denude the glans penis. I urged the necessity of dividing the prepuce, and he consented to the operation. Upon making a complete division of the prepuce laterally, on each side, I found its interior membrane much more firm and rigid than it is in its natural state, so that it greatly resembled a piece of fine parchment. Minute tubercles appeared here and there on its internal surface; but none of them seemed tending to ulceration. I did not remove any part of the prepuce; but left it in such a state that the glans penis might be denuded with ease.

This operation was performed several years ago, and I have heard nothing of the Patient since his cure was completed.

CHAP. XIV.

CASE 8.

Case 8. J. B. aged 39 years, was admitted a Patient of the Infirmary in 1803, for a cancer in the penis. He had had a congenital *phimosis*. The whole extremity of the prepuce was now occupied by a cancerous excrescence. I removed all the diseased mass; but found no part of the glans penis affected. The wound was healed in 23 days after the operation.

CASE 9.

Case 9. In 1804, Mr. M consulted me on account of a large cancerous excrescence on the extremity of the penis. The [illegible] was found to be confined to the [illegible]

return of the disease in the penis; but about eleven months afterwards he shewed me the inguinal glands enlarged on the right side. The cancerous disease proceeded rapidly in this part, and proved fatal at the expiration of three months. Case 9.

CASE 10.

JONAS ROYDS, aged 76 years, who had a congenital *phimosis*, about nine months before his admission into the Leeds Infirmary, (March 16th, 1810) perceived an enlargement of the extremity of the penis, especially on one side. The diseased part felt hard, and was prominent. A bloody serum issued frequently from the prepuce, and the discharge of his urine gave him pain. Nothing morbid appeared in the integuments; nor was any ulceration perceptible in the prepuce. In other respects the Patient was healthy. Case 10.

20th. I amputated the diseased part; and, upon examination, found one half of the prepuce ulcerated internally, and covered with a cancerous excrescence, which extended along the corona glandis, from the frænum to the dorsum penis. The rest of the glans was in a sound state; and the opposite side of the prepuce was but slightly affected.

CHAP. XIV.

CASE 11.

Case 11. J. T. a middle-aged Man, had had a congenital *phimosis*. When he consulted me, both the prepuce and glans penis were affected with a cancerous excrescence. I recommended an immediate amputation of the morbid part of the penis, which was performed. The wound healed favourably; but he afterwards suffered much, from the neglect of keeping the urethra dilated, after the operation, by the daily introduction of a bougie.

CASE 12.

Case 12. Mr. ——, after having suffered several months from a fetid discharge of purulent and sanious matter from the prepuce, without receiving any benefit from the means which had been employed, requested my opinion on his case. The prepuce was thickened and contracted at its extremity, where two hard tubercles were formed. Having no doubt of the nature of his disease, I advised the removal of the morbid parts. After dividing the prepuce, and cutting off its extremity, I dissected the whole internal membrane from the integuments, which were apparently sound. The frænum, having a morbid appearance, was removed;

removed; but the glans penis shewed no sign of disease. The wound healed favourably. But about three months after the cure, a hard tumour arose on the inferior part of the penis, about three fourths of an inch in length; the anterior extremity of which was near that part of the glans to which the frænum is attached, the remainder extending along the course of the urethra. When opened it was found to contain a curdy substance. The sac, and exterior surface of the urethra, were in so morbid a state, that I thought it most prudent to remove the extremity of the penis (including the glans) as far as the morbid sac extended.

CHAP. XIV. Case 12.

REMARKS.

Nine out of these twelve Patients, afflicted with Cancer of the Penis, had a congenital *phimosis*. This was certainly an extraordinary circumstance, if it had no relation to the origin of the disease. The disease had made such progress in some of the Patients, as to destroy entirely the natural appearance of the parts, before I had the opportunity of examining them: nor could I learn in these cases, how the prepuce appeared before, or at the first attack of, the complaint. Where I had

CHAP. XIV. I had an opportunity of seeing the disease in an early stage, the phimosis evidently appeared to have been caused by an unnatural formation of the internal membrane of the prepuce: and this formation seemed also to have given rise to the cancerous affection.—Ought not the phimosis to be removed in early life, in all cases where it is congenital?

In amputating the penis, I found great advantage from having wrapped some tape round the sound part. I was hereby enabled to divide the integuments more easily, and correctly: and I was also furnished with an useful kind of tourniquet, which secured the divided vessels from bleeding, till I was prepared to take them up with the tenaculum and ligature. I [illegible] great care in this [illegible] arteries, as they [illegible] themselves [illegible] which they [illegible]

[illegible] dressed, for a short [illegible] operation. Great [illegible] arose, from [illegible] attention [illegible].

CHAP. XV.

Convulsions after Strangulation.

May 18th, 1782, in the evening, Mr. —— being greatly distressed on account of some disagreeable circumstances in business, rashly hanged himself. He was discovered by his Son soon after the commencement of his suspension, and on being cut down shewed some signs of life. CHAP. XV.

A Surgeon, who lived near him, was immediately sent for; who, finding him lying insensible, and frothing at the mouth, and not being informed of the cause of these symptoms, took about a pound of blood from the arm. Soon after the evacuation, Mr. —— was seized with convulsions. A blistering plaster was then applied betwixt the shoulders; and some spirit of hartshorn was sent, with directions to give a little in water whenever it could be got down. When the convulsions had continued an hour without intermission, I was desired to visit the Patient,

CHAP. XV.

having attended the family in ordinary for some years.

I found him lying on a bed, which was placed on the chamber floor near an open window. He was insensible, and violently convulsed. His hands and feet were cold; the rest of his body was hot, and in a profuse perspiration. He was held down by five or six stout men, to prevent any injury to himself from the violent and almost incessant agitations which he suffered.

I was of opinion that these convulsions were the effect of debility, brought on by the suppression, and probably increased by the copious evacuation of blood. I determined therefore to give him some stimulating medicines as soon as he could swallow them; and that I might be ready to seize the first opportunity. I sent for some æther, spt. ammoniæ, and volatile tincture of valerian.

I requested a consultation, and the late Dr. HEBERDEN was desired to attend. In the mean time I directed the Patient to be placed in warm blankets upon his own bed, and wrapped his feet in hot flannel. Just before his removal I made an attempt to give him some warm wine; and succeeded in getting down a few ounces, by putting a large

spoon

spoon betwixt his teeth during a short interval of quiet, and pouring the wine into the spoon while his teeth were kept asunder by it. As soon as the wine was swallowed he belched, and seemed to be somewhat relieved.

When Dr. HIRD arrived, I informed him of what I had done. He concurred with me in the mode of treatment which I had adopted, and we determined to give our Patient the volatile tincture of valerian in warm wine, as speedily as possible.

The assistants having placed him in a sitting posture in bed, I poured into his mouth, at two or three trials, about two drachms of the tincture, diluted with wine. No sooner had he swallowed this mixture than the convulsions ceased instantaneously. He was laid down in bed, and we gave directions that a tea-spoonful of the tincture should be given now and then, or as soon as ever the convulsions should return.

I was called to visit him again betwixt one and two o'clock in the night; and was informed, that he had lain quiet during two hours after Dr. HIRD and I had left him at nine in the evening. The convulsions then returning, the tincture of valerian was given,

A saline julep was also prescribed: thin broth, chocolate, and the like, were ordered for diet. CHAP. XV.

5 P. M. He had retched after taking the bolus, but had had a stool. He was now so sensible that he could give a proper reply to questions respecting his feelings; but he had a staring and hollow countenance. The mark of the cord had not yet disappeared. Though much recovered since the morning, as to his understanding, yet he was now in a more languid state. His fingers, from their extremity to the middle joint, were pale as if benumbed with cold; and his pulse was so feeble that it could scarcely be distinguished. In this state it seemed absolutely necessary to do something to rouse the *vis vitæ*. A cordial draught, containing tinct. valer. volat. ʒj. was ordered to be given every four hours; and a little wine was directed to be given to him frequently.

20th. The draughts had agreed very well. The pallid appearance of his fingers was gone; and his pulse had considerably increased in strength. His understanding was become quite clear. The draughts were continued every six hours.

From this time he recovered very well;

CHAP. XV.

except on account of a gangrenous slough, which came upon the side of each foot. The sinapisms had been suffered to remain so long upon his feet, until they had caused a blister to rise upon the side of each foot. Upon his beginning to walk about in his chamber, an inflammation came upon the blistered parts, and was succeeded by a superficial gangrene. By keeping him in bed, applying mild cataplasms, and giving him the cortex peruvianus, the sores became clean. Flannel rollers were then used, with proper dressings, and he was permitted to walk about. The sores healed slowly; but he regained his health.

REMARKS.

This Case clearly points out the impropriety of large and indiscriminate bleeding *after* strangulation, while the powers of life remain almost suspended. The extraction of a small quantity of blood from the jugular vein, especially in a plethoric habit, might do good, when accompanied with the internal use of volatile, and other stimulating medicines.

The great advantage of these remedies was evident, both in the first instantaneous removal of the convulsions, as soon as the medicine reached the stomach of the patient; and in the

the removal of that alarming debility which came on upon omitting for a time to give the volatile tincture and wine, on the day after the accident.

The sinapisms ought not to have remained upon the feet so long as to vesicate the parts. Ulcers produced by blistering the feet are often slow in healing, in persons of a languid habit.

This Case throws some light upon the proper mode of treatment after suffocation, and concussions of the brain. In both these instances I think copious bleeding to be injurious, during the diminished state of the *vis vitæ*, which immediately succeeds the injury. In concussions of the brain I have seen great benefit arise from the warm semicupium, and blistering the head, after topical bleeding.

CHAP. XVI.

Of a Tumour in the Neck.

CHAP. XVI.

Sept. 28, 1785, the late Rev. Mr. Eyre and his Lady brought their youngest Child, aged four months, from Barnborough, to consult me about a tumour which had appeared on the left side of the neck, just above the clavicle. The Maid first perceived this tumour four days before, as she was washing the Child's neck. The tumour was now about the size of a pigeon's egg, though much smaller when it was first discovered. It had a bluish appearance, somewhat like a vein; was quite soft, and free from pain. It gave no impediment to the motion of the head. It was moveable, but not detached from the subjacent parts. It seemed to be the most tense when the Child cried. Nothing had happened to the Child in any respect remarkable, except that about a fortnight before this tumour was perceived she had cried, or rather screamed out, suddenly and

and violently. Upon undressing her immediately, nothing was perceived that could have hurt her. It was supposed she had been frightened, as she continued to moan for a few hours, and then returned to her usual cheerfulness.

From weighing all these circumstances, I was inclined to consider the tumour as arising from a varicose distention of the veins of the neck, perhaps of the external jugular vein, as the tumour was situated upon the course of that vein. I was inclined also to attribute the origin of this disease to the violent fit of crying above mentioned; as the veins of the neck are much distended at such times, and might be rendered varicose by the violence of the effort.

As I had seen two instances, not long before, of soft tumours in the same part of the neck, which I considered as varicose, one of which gradually subsided, and the other remained without injury to the patient; I advised nothing for the present, but washing the part frequently with cold water. I hoped that a little time would fully elucidate the nature of the complaint.

A week after this examination, I received a letter from Mr. EYRE, informing me, that the tumour had increased rapidly in their

CHAP. XVI.

return home, and was now so large as to alarm them much. At the expiration of the second week they returned to Leeds with the Child.

The tumour had increased to four times its former size, and the integuments seemed very thin at its most prominent part. It descended a little below the clavicle, and rose as high as the angle of the lower jaw.

There was now reason to believe that the fluid in the tumour was extravasated, I therefore proposed to puncture the tumour with a small couching needle, to ascertain the nature of the fluid contained in it. If blood should flow out, the discharge might easily be restrained, and we could afterwards act as circumstances might direct. I desired a consultation, both on account of the obscurity of the case, and that I might have proper assistance if it should be found needful to open the tumour more largely, for the purpose of taking up any ruptured blood-vessel.

The late Mr. BILLAM was consulted; and Mr. WALKER, then an apothecary in St. James's-street, London, being at my house, saw the Child along with us. Mr. BILLAM concurring with me in opinion, I punctured the

the tumour with a round couching needle. Dark-coloured blood issued out in a small stream, till the cup had received about a quarter of an ounce; the blood then continued to ooze out for about two hours. The puncture was healed in the course of the day.

The next day (Friday) I punctured the tumour again with a broad couching needle. A smaller quantity of blood issued out, which was not quite so dark coloured. This coagulated soon, whereas the former had remained fluid.

Saturday. We found the tumour not increased in size since the operation yesterday; we therefore deferred making another puncture.

Monday. The tumour had not increased. I punctured with a lancet the middle part, which was softer than the rest. A small quantity of blood was discharged. The remaining part of the tumour, which was now reduced to a small size, was solid, yet soft, as if formed by coagulated blood.

We now entertained great hopes that this formidable disease would give us no further trouble; but that the remains of the tumour would gradually disappear, or at least remain in this diminished state. But our hopes were soon,

CHAP. XVI.

soon, for a time, dispersed by an increase of the tumour, which took place within a few hours after the last puncture. The tumour in the course of the day became larger than it had been after the second operation. It continued to increase during the two following days, and then became stationary. We waited about a week, and then made another puncture. The blood which now flowed out was quite florid, like arterial blood; and coagulated immediately.

After this puncture, the tumour had no further increase. On the contrary, it gradually lessened, and became more moveable. However, I made another puncture with a couching needle; but although I pushed the point of the instrument about a quarter of an inch into the tumour, a few drops only of blood were discharged.

Our little Patient was now taken home; the small remains of the tumour were gradually absorbed, and every appearance of disease obliterated.

REMARKS.

The perusal of this Case will, I apprehend, leave no doubt in the mind of the intelligent reader, that some blood-vessel in the neck had

had been ruptured. As the interior part of the tumour was not inspected, the situation and other circumstances of the rupture must be matter of conjecture. It gave me great pleasure to see this alarming disease subdued by such gentle means, as there was at one time great reason to fear, that I should have been under the necessity of laying open the tumour, for the purpose of discovering and securing the ruptured vessel or vessels.

I take this opportunity of strongly recommending the method here used of exploring the contents of tumours in doubtful cases. I have used it upon several occasions with great satisfaction and advantage. There are few doubtful cases in which any harm could be done by the puncture of a couching needle. The contents of the tumour may be generally ascertained by such a puncture, the pain of which is trifling, and the wound is soon healed.

CHAP. XVII.

On the Empyema.

CHAP. XVII.

Sept. 3d, 1788, I was desired by the Overseers of the Poor of the township of Headingley, near Leeds, to visit John Wilkinson and his Wife, who were then *ill in* the Influenza, which prevailed at that time. The Man had been ill about ten days. I found him labouring under a fever, attended with cough, difficulty of breathing, and pain in the left side of the thorax. He was bled once; had repeated blisters applied to the thorax; took nitre and antimonials, with a linctus to allay his cough. He was relieved repeatedly by these means, especially by the application of the blisters; but repeatedly relapsed. At last he became so ill, that he breathed with the utmost difficulty; and could not lie on the right side without danger of immediate suffocation. My eldest Son, who was then my assistant in business, had chiefly visited the family; but now desired me to see the

poor

poor Man, judging him to be in the most imminent danger. CHAP. XVII.

I found him on the 17th of September, and the 27th day from the commencement of his disorder, in the state I have just now described. His face, and especially the eyelid, were a little swollen on the left side. The left side of the thorax was larger than the right, and its integuments were œdematous. Upon pressing the intercostal muscles, they felt distended; they yielded a little to a strong pressure, and rebounded again. The abdomen, especially at its upper part, appeared to be fuller than in its natural state.

From these symptoms, I was persuaded that the left side of the thorax contained pus or water; and, after explaining the nature of the disease to the man's Wife, who was now perfectly recovered, and to his Mother, I proposed the operation for the empyema.

The next day I performed it; having placed him upon a table, covered with blankets, near a window. The pain which he had felt in his side had been the most acute betwixt the fifth and sixth ribs, and there I made an opening into the cavity of the thorax. My first incision was about two inches in length. I cut through the serratus magnus and inter-

CHAP. XVII.

costal muscles close to the upper edge of the sixth rib, and made an opening into the chest capable of admitting the tip of my finger. Purulent matter immediately gushed out to a considerable distance; and the quantity evacuated measured five ale-pints. The poor Man was much relieved, yet he did not breathe well during the two first days after the operation. His cough and difficulty of breathing then abated very fast; and his pulse, which, before the operation, had beat 110 strokes in a minute, soon came down to 90, and at the expiration of a week did not exceed 84. A leaden canula was introduced into the wound on the second day after the operation, and was retained in its place by a flannel bandage.

Much coagulated matter issued out during the first two or three days, and then the matter became thinner.

My Patient continued in a favourable state until the beginning of winter, and then his symptoms became unfavourable. The matter discharged was more copious, and was fetid; his cough was more troublesome, and his pulse became much quicker.

When the cough began again to be troublesome, I prescribed for him an electuary with

with spermaceti and nitre; but, upon the discharge becoming more copious, thin, and fetid, I ordered a decoction of the bark to be given to him. This was exchanged for a decoction of myrrh, in the proportion of half an ounce to a pint of water. This medicine he took throughout the month of January, together with half a grain, or a grain, of solid opium every night at bed-time. I requested the Overseers to allow him as much new milk as he chose to take, and advised him to make this, with bread and rice, the principal article of diet. These means agreed very well with him, and seemed to be of great benefit to him. In February he ceased taking medicines. As the weather became warmer his strength increased, and by degrees he recovered his health perfectly. I did not permit him to leave off wearing the canula until the discharge from the thorax had ceased, and he had completely regained his strength. He wore it fifteen months.

REMARKS.

When an inflammation of the membrane of the lungs, and of the pleura, produces a mutual adhesion of these parts, and a collection of matter forming a tumour on the

the integuments, uniting them by suture. The integuments, by this method, formed a proper support for a canula; which was introduced obliquely betwixt the sixth and seventh ribs. The pipe of the canula made such an angle with its rim, that the shape of the instrument corresponded exactly with that of the wound.

As pellets of lead and small fragments of bone were discharged, now and then, both through the trachæa and the canula, for a long time after the wound was made; I did not remove the canula till the expiration of twelve months after the accident. The canula, during the cure, was taken out every day and washed; that no acrid matter might, by means of it, be detained in the thorax. This patient is now a healthy man; but violent exercise is apt to bring on a spitting of blood. He coughed up several pellets soon after the canula was removed; and there is yet (1802) at times, a slight oozing of serous fluid from the cicatrix*.

* March 8th, 1810, I was informed by the Brother of this Patient, that the occasional spitting of blood had ceased; that the cicatrix remained firm, without any oozing of serous fluid; and that he had enjoyed perfect health since the year 1802, when the above account was written.

CHAP. XVIII.

Of an Enlargement of the Mamma.

CHAP. XVIII.

MANY circumstances shew, that the *Uterus* and *Mamma* sympathize with each other. This is not merely in child-bearing women: but various morbid affections of the breasts also indicate a kind of permanent sympathy. I have repeatedly seen the mammæ become enlarged, where there appeared to be no other cause than a deficiency in the menstrual evacuations. The following Case of an enlargement of the mammæ, which seemed to arise from an obstruction of the menstrua, is so remarkable, that it may deserve to be recorded.

MARY BRADBURN, aged fourteen years, was admitted June 8th, 1787, a Patient of the General Infirmary at Leeds, on account of a very great enlargement of both the mammæ. From her infancy they had been somewhat larger than the natural size. She was of a delicate habit: but was not unhealthy before

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the attack of this disease. She began to menstruate when she was twelve years and a half old; and being ignorant of this habit of her sex, and ashamed to mention her situation, she washed that part of her linen which was stained, and continued to wear it while wet. The evacuation ceased suddenly, and had not returned when she became a Patient of the General Infirmary.

Many means were used to bring on a regular menstruation, from a supposition that the enlargement of the mammæ was owing to this obstruction. The obstruction, however, was not removed; and the breasts continued to grow larger.

Her situation was now truly deplorable. The size of the breasts was so enormous, that she could not walk upright. The constant bending forwards had brought on a permanent curvature in the spine. The dragging sensation, arising from the weight of her breasts, was so troublesome, that she was never easy unless when lying in bed, or sitting with the breasts resting upon her knees. There seemed to be no method of relief remaining but that of amputation. Upon a consultation, it was determined to remove the

CHAP. XVIII.

left breast, which was the larger, and to wait the event of this operation.

There appeared to be no disease in the breasts, except that of simple enlargement; and their weight had separated them so far from the subjacent pectoral muscles, that I could push my finger, along with the integuments, some way behind each mamma; which felt like a bundle of enlarged glands connected together. This detached state of the breasts rendered the operation neither difficult nor tedious. I left a considerable portion of the integuments to cover the part from whence the breast was removed; and the patient recovered without any bad symptom. The breast, after amputation, weighed eleven ounces four ounces avoirdupois.

The operation was attended with a success that exceeded my expectation. Menstruation soon returned, and became regular. A diminution of size in the right mamma was in a short time apparent; and during an attack of fever, which she had about six months after her discharge from the Infirmary, the diminution became considerable.

She is now (1802) a healthy young woman, and at the time of writing this, twenty-three years of age. The right breast is still larger than

than is natural; but it is not half so large as it was before the amputation of the left breast. The integuments covering the right breast are in a loose flabby state; and the breast itself does not feel like one compact gland, but, as was mentioned before, like a number of glands connected. A curvature in the spine still continues; but she is become straighter than she was before the operation.

CHAP. XIX.

On Collections of Pus in the Vagina.

CASE 1.

CHAP. XIX. Case 1.

IN April, 1780, Mrs. D. of S. about twenty miles from Leeds, consulted me on account of a very troublesome *fluor albus*, as she judged it to be. She informed me, that the disorder had come upon her about five years before, during pregnancy; and had hitherto resisted the effect of every remedy given for her relief. In answer to my inquiries, she gave me the following account of her complaint.

The colour of the discharge was white, inclining to yellow. It flowed in an irregular manner, unconnected with any circumstance which she could recollect. Sometimes the discharge ceased entirely, Sometimes it began to flow suddenly in large quantity; and continued diminishing until it ceased. The

parts

parts were often rendered sore by the evacuation.

Case 1.

From these circumstances, I suspected that the nature of the complaint had been mistaken; and was apprehensive that a collection of purulent matter might have been formed in the vagina. I gave her the reasons of my suspicion; and told her, that, in my opinion, the true state of her case could not be ascertained without an examination of the part affected.

Upon examination, my suspicions were verified. I found a quantity of purulent matter collected on the left side, where the labium pudendi joins the vagina. I thrust the blunt end of a probe into the cyst, where it appeared to be very thin, and the matter flowed out copiously. I informed her, that a surgical operation would be necessary for her cure; but she declined submitting to it, and returned home.

I heard no more of my Patient till May 1781, when she returned to Leeds, determined to put herself under my care. The disorder had remained in the same state. The cyst was sometimes healed; and then, bursting open, continued for a time to discharge the purulent matter, as before.

Upon

CHAP. XIX. Case 1.

Upon dividing the cyst, I found that the cavity in which the matter lodged was about an inch and half in diameter. The whole interior surface of the cyst was smooth and shining; and on that account I judge it improbable that a simple division of the cyst would effect a cure. I thought it necessary, therefore, to remove the greater part of that portion of the cyst which is formed by the internal lining or cuticle of the labium pudendi. The hæmorrhage was inconsiderable, and soon ceased. The wound healed kindly, and my Patient obtained a perfect cure.

CASE 2.

Case 2.

In 1786, ANNE MILLER came under my care as an out-patient of the General Infirmary at Leeds, for a node upon the tibia, which I suspected to have had a venereal origin. When she was about to be discharged cured, she informed me, that she had been troubled for fifteen or sixteen years with sudden and irregular discharges of purulent matter from the vagina. These discharges, she said, were frequent, and sometimes considerable; yet she never perceived any matter to be mixed with her urine.

Upon examination, I found a roundish tumour

tumour at the os externum, appearing to be formed by an enlargement of the bulbous part of the urethra. When the tumour was compressed, pure pus issued from the urethra; yet her urine, when drawn off with a catheter, did not contain the least mixture of purulent matter. Upon introducing a bent probe into the urethra, I could easily push it to the most depending part of the tumour; and could feel the probe distinctly by a finger introduced within the vagina.

Case 2.

I divided the tumour longitudinally, at a time when it was distended with matter. That part of the vagina which I cut through was not thinned by the distention, but was rather tough. The cavity of the cyst was smooth. As the opening which I had made was depending, and as the removal of any part of the cyst would have been attended with difficulty, I only filled the cavity with lint. A small artery was opened by dividing the cyst, but the hæmorrhage did not continue long. This Patient recovered speedily, and got quite free from the complaint.

CHAP. XX.

On Alvine Concretions.

CHAP. XX.

SO many histories have been published of Alvine Concretions which had acquired a form somewhat globular, generally containing a nucleus of some hard and indigestible substance, as the stones of fruits, &c. that it may seem unnecessary to relate more instances of this disease.

Yet, as this Work may fall into the hands of some persons, who have not read the histories to which I allude; and as the *Public* can scarcely be too often reminded of the impropriety of swallowing the stones of plums or cherries, which young people especially are apt to do in eating those fruits; I shall give one instance of the dangerous, and another of the fatal effect of these concretions.

CASE 1.

Case 1. I was desired some years ago to visit a young Woman, who complained of great pain

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Case 1.

in the hypogastrium, and at the anus; attended with difficulty of discharging her fæces. The pressure which she felt occasionally at the anus was so great, that I judged it necessary to examine that part; and found a hard substance pressing against the sphincter ani, which she could not expel by the natural efforts.

I extracted this substance by means of a pair of forceps used in lithotomy; and found it to be a ball of light friable matter, containing a rough plum-stone in its centre. After this was removed, two other concretions of the same nature presented themselves; and were extracted in succession by the same instrument. They had each of them a plum-stone for a nucleus.

Upon inquiry into the origin of this young Woman's complaint, there seemed no reason to doubt, that these stones had remained six years in the alimentary canal. The young Woman recollected having paid a visit to an uncle, who was a grocer at Wakefield, and who had permitted her to eat freely of prunes in his shop. She remembered also having frequently swallowed the stones of the prunes which she then ate. But six years had now elapsed since this visit; and she was positive,

that

CHAP. XX.

Case 3.

her (Feb. 9th) a solution of the bitter purging salt, and an oily emulsion. She took no medicines from this time till the 21st, three weeks after her delivery; when she took a purging draught, and some more of the emulsion. She was not now confined to her room, nor even to the house; but sometimes walked out into the garden.

In the last week of February the complaint became more troublesome and constant. She had frequent pains, exactly resembling those of labour; attended with a considerable degree of pressure downwards. Purging draughts, laxative clysters, together with the oily emulsion, and occasionally an anodyne at bed-time, afforded her some relief. Her pulse, however, became more frequent, and a degree of fever remained constantly upon her.

During the month of March she was chiefly confined to her chamber, as walking seemed to increase the pressure downwards. She took the simple saline draughts, and sometimes an opening draught; but the evacuation of the fæces was principally assisted by the injection of mild clysters. In the last week of this month, the Nurse found the clysters did not pass into the intestines

as

Case 3.

as usual; but returned immediately. A solution of the bitter purging salt was, therefore, given more freely, but it did not answer as usual; and before the termination of the week, a complete obstruction in the alimentary canal took place. She now began to reject by vomiting what was taken into the stomach; and there was an evident fulness in the abdomen, particularly in the hypogastrium, which had not before been perceived.

As the Nurse had failed in her attempts to inject the clysters as usual, and as purgatives taken by the mouth were now rejected, it became necessary to make the strictest inquiry into the cause of this obstruction. I attempted to give my Patient a clyster; but found the same difficulty of which the Nurse had complained. The pipe passed readily into the rectum, and was not blocked up by fæces; yet the clyster returned immediately, without passing into the colon, whatever force was used in the injection.

Upon introducing my finger into the rectum, I found it empty; but its highest part was closed, being pressed against the os sacrum by a hard substance, which occupied the superior part of the pelvis. This substance

CHAP. XX.

felt like an enlarged uterus; enlarged, I mean, when considered in its unimpregnated state.

Case 3. I made an examination also per vaginam; and was still led to think, that the uterus was pressed against the os sacrum.

At this period of the disease Dr. DAVISON was consulted, who continued to attend with me during the remainder of our Patient's indisposition. We gave various purgatives, as ol. ricini, jalap alone, or with the addition of calomel, in the form of pills, magnesia with lemon juice taken immediately after it. These medicines sometimes remained for a few hours upon the stomach; but were always sooner or later rejected. A warm semicupium was used, which afforded some relief from pain; but did not procure an evacuation of the fæces.

Our Patient was now reduced to a state of extreme danger. Purging medicines afforded no relief, and clysters injected into the rectum could not be made to pass the stricture at the brim of the pelvis. In this dilemma it occurred to me, that if I could make a long flexible catheter pass beyond the compressed part of the rectum, I should be enabled to inject a clyster through it into the sigmoid flexure of the colon; and thereby

probably bring down the obstructed fæces. To effect this purpose, I introduced the fore-finger of my right hand as high in the rectum as possible; and with this finger directed the catheter to that part where there seemed to be the least resistance. I then pushed on the catheter with my left hand, and with my finger which was in the rectum. By this method, though not without difficulty, I made the instrument pass into the sigmoid flexure of the colon, into which I now injected a large clyster. When the catheter was withdrawn, its extremity appeared to have passed into some indurated fæces; which circumstance not only threw light upon the nature of the disease, but also afforded us strong hopes of being able to subdue it. An evacuation of fæces was procured, and the vomiting ceased.

Case 3.

The clysters were repeated, by the method above mentioned, morning and evening, so long as they appeared to be necessary. They were generally made with a pint of water-gruel, and an equal quantity of olive-oil, mixed by means of the yolk of an egg. The fæces were sometimes discharged in hard lumps; but they had generally the appearance of bran; as if they had become dry by

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Case 3.

their long residence in the intestine, and had afterwards become mixed with the more liquid excretion of the intestines, or with the clyster. This kind of excrement continued to come away during the course of a fortnight.

In the second week of April a spontaneous diarrhœa took place, and our Patient became very feeble. She had now and then a retching, which seemed to arise from mere debility of the stomach. Anodynes, with tonic and cordial medicines, were now given. Wine, or a little brandy, was put into her gruels, which were made with sago, tapioca, salop, and the like.

Mrs. S. had at this time a cough, which was troublesome. The matter expectorated was mucus; and we hoped that *it arose* merely from too copious a secretion of that fluid, without any serious affection of the lungs.

Though the original disorder had been completely removed; the secondary complaints which supervened, attended with general debility, brought our Patient again into imminent danger. Though the diarrhœa was in a considerable degree restrained; yet she became more and more emaciated, and that to

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a very great degree. The quantity of food which she took was small, and her digestion seemed languid. CHAP. XX. Case 3.

In this state, April 28th, Dr. DAVISON proposed the application of a blister to her stomach, with the view of rousing the action of that important organ; and affording a general stimulus to the habit. This seemed to have a good effect. We found her not quite so low the next day. From that time she continued to recover, though slowly, and at last regained perfect health.

CHAP. XXI.

On the Atheroma.

CHAP. XXI.

THE Atheroma is an encysted tumour, containing a substance resembling soft curds*. It is situated immediately under the cutis; and the attachment of its cyst to the circumjacent adipose membrane is generally slight. It frequently attacks the face in children; forming tumours about the size of a pea, which are smooth, and appear rather whiter than the rest of the skin. These after some time become inflamed, and burst. Their contents are then discharged, and the part heals without any inconvenience. From this spontaneous termination of the complaint, these tumours are usually left to take their course; and are considered as of little consequence.

* Ἀθηρωμα est tumor concolor, doloris expers, in quo aliquid pulticulæ, quæ ἀθηρα vocatur, simile, tunicâ quâdam membranosâ concluditur.

Gorræi Definitiones Medicæ, p. 8.

quence. When, however, they are situated on the eyelids (which they often attack) and particularly near the eye-lashes, they sometimes, during their inflamed state, produce a troublesome ophthalmy; which I have seen terminate in an opacity of the cornea. It is of consequence, therefore, to know the proper treatment of this complaint; and the following description of an easy method of cure may not be unacceptable to the young practitioner.

If the eyelid is the part affected, I make an incision across the tumour in the course of the fibres of the orbicular muscle; and, after pressing out the contents, I pull out the cyst with a pair of dissecting forceps. It is often difficult to distinguish the cyst from the cutis, when the tumours are small; but by pressing the points of the forceps against the sides of the cavity, whence the curdy matter issues, one may soon lay hold of some part of the cyst. Its attachment to the surrounding cutis and membrana adiposa is so slight, that it is drawn out without difficulty. It is sometimes broken in the extraction; but one may readily discern whether any part of it remains unremoved by the following criterion.

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So long as any fragment is left, the appearance of tumour continues; whereas when the whole is extracted, the tumefaction vanishes entirely. No other dressing is necessary in this case than a little emplastrum lithargyri.

If this operation is delayed till the cyst has burst, and the tumour, being large, has remained in a state of inflammation for a week or two, a fungus will sometimes be found within the tumour, which may require the application of the lunar (or some other) caustic.

Atheromatous tumours are often found upon the heads of adults. I have seen the scalp almost covered with them. The cyst, in this situation of the tumours, becomes firm, resembling a bladder in texture and thickness. If the tumour is not large, the cyst may be removed whole; by laying hold of it with a hook, after making a crucial incision through the skin, and separating it from the upper part of the cyst.

When these tumours are situated on the eyelids, they ought to be removed before they become inflamed, if an opportunity of doing this is afforded; but a state of inflammation should not be considered as an impediment

impediment to the operation, especially if the conjunctiva partakes of that state. I have seen a dangerous ophthalmy subside immediately, upon the removal of the cyst of an inflamed atheroma, situated upon the edge of the eyelid.

CHAP. XXI.

On deep-seated Abscesses in the Mamma.

CHAP. XXI.

THE Abscess, which I mean to describe, does not frequently occur; yet it is not confined to women in the puerperal state, nor to those who give such. I have seen it repeatedly in unmarried women. It does not [illegible] its original formation from a common abscess, but its situation renders all [illegible] ineffectual, and requires a [illegible] of cure, than that which [illegible]

running in a variety of directions; and, when opened, are found to be in part filled with a soft fungus of a purple colour.

The disease will sometimes continue for many months with little variation in its appearance. A degree of hectic fever, however, is kept up by the absorption of the confined matter; and the breast usually becomes more indurated in proportion to the continuance of the complaint. I have not hitherto met with any case, which has not been cured without extirpation of the breast. The following treatment has always proved successful; and has sometimes effected a cure in less time than the extent of the wounds led me to expect.

Having examined the course of that sinus, out of which the matter issues, I divide it throughout, however deep its situation in the breast may be. I then examine carefully with my finger the whole extent of the wound, that I may discover the orifices of any other sinuses connected with it. These, it is necessary to observe, cannot always be discerned with the eye, as they are sometimes filled up with the soft fungus above mentioned, and present no visible cavity. By pressing the finger upon any part that feels softer than the rest of the wound,

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wound, one may easily break down the fungus, and thereby discover the orifice of any collateral sinus. All the sinuses must be opened through their whole extent, however numerous, or tortuous in their course. Unless this be done, the operation proves fruitless. If, in doing this, I find any two sinuses running in such directions, that, when fully opened, they leave a small part of the mamma in a pendulous state, I remove that part entirely. I have been under the necessity in this operation of making so many incisions through the breast, that it has been divided into several pieces; yet the wounds have healed favourably, and the breast has ultimately preserved its natural figure. This operation has succeeded in habits which would be judged unfavourable to the healing of any wound, as in the following

CASE.

MARTHA WILSON, of Pontefract, was admitted an in-patient of the General Infirmary at Leeds, on account of scrofulous ulcers. I scarcely ever saw them so numerous in any one person. The anterior part of the thorax, the clavicle, the shoulder, and axilla on the left side, were almost covered with them. After having obtained considerable relief by the

the use of the lotion mentioned below*, by which most of the superficial ulcers were healed, (the incrustations, which covered them at her admission, being removed by a digestive ointment) she was made an out-patient.

While she remained at home, a deep-seated abscess was formed in, and behind, the mamma. After this had continued some months she was again taken into the House. The matter had burst through the integuments just above the mamma. A probe, introduced at this orifice, passed down behind the breast, till it might be felt through the integuments below. I made a complete division of the breast; and also opened three lateral sinuses, which communicated with the longitudinal one, but were not of great extent. Notwithstanding the habit of this Patient, the wounds healed so speedily, that an union of the divided parts was formed in the course of a fortnight, and the wounds were cicatrized in a short time afterwards. The proper form of the mamma was preserved.

* ℞. Aquæ puræ, ℥ xxx.
Spt. Rosmarin. ℥ ij.
- - - Lavendul. comp. ʒ ij.
Zinci sulphat. ʒ j.
misce fiat. lotio.

The ulcers were kept continually moistened with this lotion, by the application of folded linen cloths previously soaked in it.

CHAP. XXIII.

On Amputation.

CHAP. XXIII.

Diseases which require the amputation of a limb, or some part of the extremities, so frequently occur, that every improvement of this operation must be considered as important in the practice of surgery. The method of amputating so as to heal the wound by the first intention, as it is called, I consider as a capital improvement; and am sorry that it is not yet universally adopted. If I were not aware of the force of long established opinion and practice, I should be ready to conclude, that a surgeon was defective either in knowledge or humanity, who did not prefer this method, whenever it was in his power to make use of it.

A cure is performed by it in one-fourth part of the time which is required when the ordinary mode of dressing is used. The pain subsequent to the operation, which is great and long continued when the interior parts

parts of the wound are dressed, is hereby avoided in a great measure; and the cicatrix, which must remain in some degree after the wound is healed, being reduced to a very small breadth, is not so liable to break open again from accidental injuries. This method of operating, when rightly understood, is not peculiarly difficult; but the comparative relief which the patient receives from it is great indeed.

1. *Amputation in the Thigh or Arm.*

WHEN a flap is not made, which is usually unnecessary when amputation is performed in the thigh or arm, nothing more is necessary than to amputate with a triple incision; and to preserve such a quantity of muscular flesh and integuments, as are proportionate to the diameter of the limb. By a *triple* incision I mean, first, an incision through the integuments alone; secondly, an incision through all the muscles, made somewhat higher than that through the integuments; and thirdly, another incision through that part of the muscular flesh which adheres to the bone, made round that part of the bone where the saw is to be applied. When these incisions are made in their proper places, the integuments

and

CHAP. XXIII.

should be directed somewhat obliquely upwards in dividing the muscles; and the division should be made through the posterior muscles at one stroke, and through the anterior at another.

In order to make the third incision, the divided integuments and muscles must be drawn upwards by an assistant, who will generally do this the most conveniently with the aid of a retractor; and who should be cautious to avoid pulling the periosteum from the bone, when the muscles which adhere to it are divided.

The most perfect union of the soft parts would be produced by making an incision through them all in a conical form; of which the narrowest part should be that part of the bone where the saw is to be applied. But such an incision is impracticable in the ordinary mode of operating; nor is it necessary for the formation of a good stump*.

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* It is evident, that a conical incision through the muscles of the thigh cannot be made with a continued stroke, in the usual mode of amputating. For supposing the edge of the knife to have once penetrated obliquely through the muscles, so as to be an inch higher, when arrived at the bone, than when it penetrated the surface; if the incision be continued with a flowing stroke,

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As it is desirable that the ligatures, by which the bleeding vessels are secured, should be cast off in the course of ten or twelve days; it is the best method to draw out the extremity of each vessel with a tenaculum, for the purpose of applying a ligature. But the situation of an artery is often such, that it becomes necessary to make use of a needle. In this case, the needle should be made to pass as near the vessel as possible. I have been accustomed to tie the femoral artery twice, leaving a small space between the ligatures; and this method has been constantly used in the Leeds Infirmary since its establishment. Having seen a few instances of bleeding from the femoral vein, I generally inclose the vein in the ligature along with the artery.

I have seen a few instances of the integuments becoming so contracted after the operation, as to compress the veins just above the extremity of the stump, and bring on after some hours a copious hæmorrhage. When it has appeared clear to me that the hæmorrhage

stroke, the knife must then cut the surface of the undivided muscles an inch higher than at the commencement of the incision.

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hæmorrhage was venous, I have made a division of the integuments on one side of the thigh, sufficient to remove the stricture; and this method has immediately suppressed the hæmorrhage. Should the integuments, after amputation, shew such a disposition to contract, as to threaten a strangulation of the stump, (a case which I have seen) it is then prudent to make a longitudinal division on one side of the stump before the dressings are applied; and to continue it so high as to remove all appearance of undue contraction.

Sometimes the integuments of the thigh are in a morbid state on one side of the limb, while they are sound on the other. In this case, a longer portion of integuments and muscular flesh must be left on the sound side; which will not prevent the *formation* of a good stump. The morbid state of the anterior or posterior side of the thigh sometimes extends so far above the knee, that it is advisable to amputate with a flap. I have several times, indeed, made a flap on the anterior part of the thigh by choice; though I do not usually operate in this way, as it unnecessarily shortens the remaining part of the limb. I have never, but from necessity, made a flap on the posterior side of

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the thigh; yet this may be done in certain cases with great advantage. CHAP. XXIII.

A Brother of the ingenious Mr. MANN, of Bradford, near Leeds, the inventor of the new artificial wooden leg, had an enlargement of the inferior and anterior part of the thigh-bone, which required the amputation of the limb. The posterior part of the thigh being in a perfectly sound state, I made a flap of the integuments and muscles on that side; and by this method was enabled to saw off the bone immediately above the tumour, which in this case was a great advantage. The tumour, upon dissection, was found to be principally cartilaginous; though the process of ossification had begun in it, and seemed to be advancing from the thigh-bone towards its exterior parts. The necessities of a near relation urged both the Father and Brother of this Patient to contrive an excellent succedaneum. The contrivance of the Brother being judged to have superior excellence, a patent was obtained for the invention, which has added much comfort to the lives of many who have had the misfortune to require amputation above or below the knee.

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In scrofulous white-swellings of the knee, the *saculus mucosus*, which lies behind the tendon of the rectus femoris, is sometimes in a morbid state; distended with a glary purulent fluid, and extending so high above the knee, that it would be inconvenient to make the incision through the muscles above the tumour. In this case, a surgeon is not under the necessity of amputating with a flap made on the posterior part of the thigh, if he dislikes this mode of operating: but he should dissect out that part of the morbid sac which remains above the place where the muscles are divided. This operation is practicable; and I have usually judged it to be prudent, lest the remains of so morbid a part should give rise to some fresh disease in the stump.

When the limb is amputated, the integuments and muscles may be brought into contact by pressing either the anterior and posterior parts, or the sides of the thigh, together. The former method, by the gradual retraction of the posterior muscles, causes the integuments of the anterior part of the stump to cover more completely the extremity of the bone. The latter method allows the integuments and muscles to meet each

each other the more readily; and therefore is to be preferred when the quantity of soft parts preserved is somewhat deficient.

The integuments are most conveniently held in contact by sutures, for the making of which, straight needles should always be used. But an union of the parts may be produced without sutures, by keeping them in exact contact with the assistance of plasters. Both these methods of dressing have their advantages and disadvantages; and my opinion has fluctuated respecting their superiority. Plasters give less pain in their application, and are more easily removed and renewed when a subsequent hæmorrhage requires the stump to be opened: but they confine the purulent matter more within the wound, and thereby delay the cure; and sometimes cause pain from the confinement of the matter. Sutures give more pain in the application, and that sometimes in a considerable degree; but then, if the amputation has been properly conducted, no tight pressure of plaster, nor strict bandage, is required to keep the integuments in contact; a long pledget of cerate, with a flannel roller, being all the dressing required, till the ligatures of the integuments are removed. The purulent matter escapes

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more readily through the apertures in which the ligatures of the vessels lie, and the cure is generally more speedily accomplished. Either method may be used after amputation made upon the thigh, with the triple incision; but when a flap is made in the leg, *sutures* are preferable, for a reason which I shall mention.

These methods may be combined; and the combination is, in my opinion, more useful than the application of plasters alone. Without two or three sutures, the integuments are apt to be displaced during the renewal of the plasters in dressing.

When sutures are used, the straight needles should be pushed obliquely through the integuments for the purpose of bringing them [illegible] into contact.

[illegible] the first two days, the pledget and [illegible] may be renewed every day: and as [illegible] ligatures which united the in[illegible] become loose, they should be cut [illegible] parts should be supported by [illegible].

It is no sufficient objection to the method of healing a stump by bringing the divided parts into contact, without the intervention [illegible] other extraneous substance, except the

ligatures

ligatures which have been applied to the arteries, that a hæmorrhage may take place several days after the operation, and even when the integuments are united. This is a rare occurrence, though I have known it to happen. However, I know that the separation of the integuments by a scalpel, in this case, gives very little pain to the patient; and the possibility of such an occurrence is not to be set in competition with the advantages of this method of conducting amputation.

When we are under the necessity of amputating a limb that has suffered great contusion, though the operation is performed upon a part apparently sound, the wound sometimes becomes sloughy, and ill-conditioned. No good granulations arise to cover the extremities of the arteries; but the ligatures cut through these vessels, or, becoming loose, cease to make a sufficient pressure upon them, and hence repeated hæmorrhages ensue. This is a dangerous state for a patient; for if the vessels are taken up afresh with the needle, the hæmorrhage will now and then return in the course of two or three days. In such cases the application of dry sponge, cut transversely, as directed by Mr. WHITE*, has been found

* See Cases in Surgery, by CHAS. WHITE, F.R.S.

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found singularly useful, and has saved the life of the patient. But a constant pressure must be kept upon the pieces of sponge, by the fingers of a succession of assistants, till granulations begin to arise upon the stump, and the prospect of future hæmorrhage disappear. This method is of the greatest importance after amputation on the thigh or leg, where the great vessels are deeply seated. In the arm, above the elbow, where the vessels are more superficial, the great artery may be taken up, with a portion of muscular flesh, above the surface of the stump, by making first an incision through the integuments. My colleague, Mr. LOGAN, did this twice in the year 1801 with complete success, when repeated ligatures, applied in the usual way, had failed.

In the morbid sloughy state of the stump above mentioned, the application of lint soaked in a liquid, composed of equal quantities of lemon juice and rectified spirit of wine, has been found very advantageous; and has caused the stump to put on soon a healthy aspect.

2. *Amputation below the Knee.*

AMPUTATION below the Knee, when a flap is preserved, has been usually performed at as small a distance above the ancle as the formation of a flap will admit: but I am satisfied from much experience, that this is not the most proper place for amputation.

Soon after Mr. WHITE had published his account of amputating with a flap, as recommended by Mr. O'HALLORAN, of Limerick, I went over to Manchester to see the effect of this operation. It appeared to me to be a considerable improvement in surgery; though, from the manner in which Mr. WHITE then made the flap, this did not completely cover the extremity of the stump. I determined, however, to introduce this method of amputating into the Infirmary at Leeds; but before an opportunity offered, I was informed of an improvement which Mr. BROMFEILD had made upon Mr. WHITE'S operation*. Mr. BROMFEILD'S manner of making the flap seemed superior to that of Mr.

* Mr. BROMFEILD afterwards published this method.

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Mr. WHITE; but I approved of the double incision which Mr. WHITE had used in some of his cases. I resolved therefore to combine the improvements of these two eminent Surgeons, by making the flap in the manner recommended by Mr. B.; at the same time preserving, by the double incision, a portion of integuments, on the anterior part of the leg, sufficient to cover completely the edge of the tibia.

I operated for the first time after this manner, March 1st, 1772; and, as Mr. LUCAS has observed, who sent an account of this and some other Cases to the Medical Society in London, "no opportunity has been "omitted in giving the preference to this "mode of amputating since it was first "done*." After Mr. ALANSON, and the other Surgeons at the Liverpool Hospital, had made a further improvement of this operation, by applying the flap immediately after amputation, Mr. LUCAS proposed and adopted their method at the Leeds Infirmary, in preference to that, recommended by Mr. WHITE, of dressing the flap and stump separately till the ligatures had fallen off. Since that time we have constantly used the same

* Medical Observations and Inquiries, vol. v. p. 327.

same method, unless some peculiar circumstances of the case rendered it improper. CHAP. XXIII.

In 1774, I operated upon JAMES PILKINGTON*, in whose case I was under the necessity of amputating at the lower part of the belly of the gastrocnemius muscle. I applied the flap by degrees, and made a good covering for the stump. I continued, however, to amputate in general a little above the ancle for many years. But some cases occurring, in which, from a scrofulous habit, the wound would not heal completely, or remain healed, so that the patient could neither bear the pressure of a socket, nor conveniently use a common wooden leg (as the length of the limb projecting backwards exposed the stump to frequent injuries); I determined to try whether amputation in a more muscular part of the leg would not secure a complete healing, and give the patient an opportunity of resting his knee on the common wooden leg, or using a socket, as he might find most convenient.

I now prefer this method; and have reduced it to certain measures, the recital of which will best convey my ideas, and assist those

* Medical Observations and Inquiries, vol. v. p. 327.

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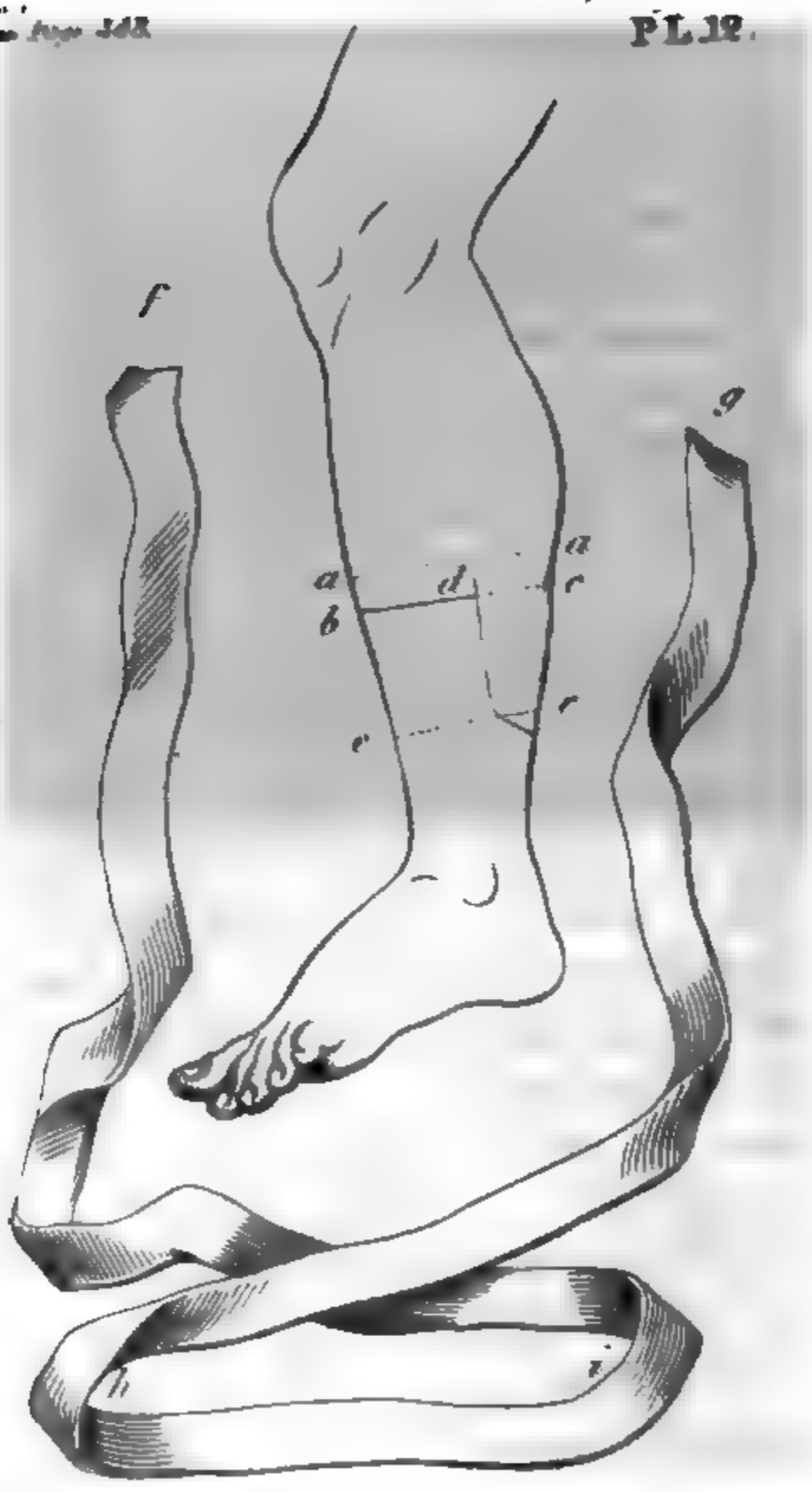
those who wish to adopt this mode of amputation.

It had been the general practice at the Leeds Infirmary, to make the length of the flap equal to one-third of the circumference of the leg, at that part where the amputation was made. But we used no measure for the breadth of the flap. This was determined by the eye of the operator, who usually pushed the catlin through the leg, near the posterior part of the fibula. Finding that I did not always make the flap of the most convenient breadth, I began to ascertain this also by measure, and now always operate in the following manner:

To ascertain with precision the place where the bones of the leg are to be divided with the saw, together with the length and breadth of the flap, I draw upon the limb four lines, three of them circular, and one longitudinal. The situation of these lines is determined in the following manner. I first measure the length of the leg from the knee to the ancle; that is, from the highest part of the tibia to the middle of the inferior protuberance of the fibula. At the midway between these two joints I make the first, or highest, circular mark upon the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leg*. This mark is to point out the place where the bones are to be sawn through. At this mark also I measure the circumference of the leg; and thence determine the length and breadth of the flap, each of which is to be equal to one-third of the circumference. In measuring the circumference of the limb, I make use of a piece of marked tape or ribbon†, and place the extremity of this measure upon the anterior edge of the tibia. I will suppose the circumference to be twelve inches, in which case I make a dot in the circular mark on each side of the leg, at the distance of four inches from the anterior edge of the tibia. It is evident that these dots will be found four inches distant from each other, when the measure is applied to the posterior part of the leg. From the dot which is on the outside of the leg, I draw a straight line downwards, four inches in length, and parallel to the anterior edge of the tibia‡. This line marks the course which the catlin is to take in the formation

* Plate 12. fig. 1. *a a*.

N.B. The *continued* lines in this figure mark the place and extent of the incisions. At the place of the *dotted* lines there is no external incision.

† Such as are sold in the shops, in small ivory cases.

‡ Plate 12. fig. 1. *d*.

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formation of the flap. At the extremity of this line I make a second circular mark upon the leg, which points out the place near which the flap is to terminate*. Lastly, I make a third circular mark, at the distance of an inch below the superior one which was first made†; which intermediate mark is designed to direct the circular incision through the integuments on the anterior part of the limb. The course and extent of the different incisions being thus marked out, the operation may be performed with the greatest precision.

The catlin, which is used for the purpose of making the flap, ought to be longer than those which are commonly made for a case of amputating instruments. That which is used at the Leeds Infirmary is seven inches long in its blade. I prefer a catlin which is blunt at the back, as I wish to avoid making any longitudinal wound in the arteries at the extremity of the stump; for such a wound makes it more difficult to secure them with a ligature.

* Plate 12. fig. 1. *e e*.—The incision should be carried to a small distance below the inferior circular mark, to allow for the retraction of the skin, which is the greatest at its extremity, and to preserve a circular border in the flap.

† Ib. *b c*.

ligature. For the same reason, I push the catlin through the leg, a little below the place where the transverse incision is to be made of those muscles which are not included in the flap. Having placed the limb in a position nearly horizontal, with the fibula upwards, and the knee bent, I push the catlin through the leg at *d*; and carry it downwards, along the course of the longitudinal mark, till it approaches the lowest circular mark, which it joins in the course of the curved line, and the incision then terminates a little below the inferior circular line *e c*.

The flap being held back by an assistant, I divide the integuments on the anterior part of the limb along the course of the circular mark *b d*. There is always a considerable retraction of the skin after it is divided, if the integuments are in a sound state: and if a proper allowance were not made for this retraction, the extremity of the tibia would be left uncovered; and the flap could not be applied with so much ease to the patient, nor with a certainty of an union by the adhesive process.

The muscles, which are not included in the flap, are then divided transversely a little below the place where the bones are

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to be sawn through; but no great quantity of muscular flesh can be conveniently preserved below the extremity of the divided bones (on account of the adhesion of the muscles to the bones); nor is it necessary, as the flap, when made in the middle of the leg, contains a portion of the gastrocnemius and solæus muscles, sufficient to make a good cushion for the extremity of the bones.

When the bones are sawn through, it is advisable to cut off a little of the extremity of the conjoined flat tendon of the gastrocnemius and solæus muscles; as it is apt to project beyond the skin when the flap is placed in its proper situation.

It is also advisable to take off the sharp edge of the tibia, at its anterior projecting angle, by bone nippers or a file.

The large crural nerve is frequently found lying upon the inner surface of the flap. It should then always be dissected out; and, when gently extended, should be divided near the extremity of the stump. By this method it will retire so far as to suffer no compression from the flap.

I have repeatedly supported the flap by plasters, without making use of a needle. But although sutures are undoubtedly a pain-

of the operation, yet, upon the whole, they contribute to the ease of the hen amputation is performed below with a flap; for the flap cannot in exact contact with the surround- uments by means of plasters only, aking a considerable pressure upon f the bones. And as the surface gainst which the muscular part must be pressed, is here consi- flap is apt to become inflamed re, and to give the patient more it is united to the integuments ch keep the flap in such exact divided muscles and integu- e is no occasion for strong . It is sufficient to apply rt plaster between the liga- the integuments from re- laces; and to support the ledget of tow spread with ured by the flannel roller

ich unite the flap to the ents, may be cut out on day after the operation, then be supported by

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I shewed Mr. MANN, of Bradford, a stump, made by amputating in the manner here directed; and he assured me, that it was exactly of the length most suitable for the application of his artificial leg. Indeed, the advantages of a stump made according to the above rules, must strike every one, upon the first view, who is at all acquainted with the subject. Mr. MANN advises all persons, who wish to avail themselves of his invention, to keep a roller constantly applied to the leg or thigh after amputation, as without this previous pressure the limb is apt to shrink, and become somewhat loose in the socket of his wooden legs*.

3. *Excision of the Metatarsal Bones.*

THE Metatarsal Bones are sometimes affected with caries, while every other part of the leg remains sound. In this case, the removal of the diseased parts may be effected without amputation of the whole foot. The remainder of the foot, with the assistance of the ancle-joint, proves of great use to the

* Mr. MANN has also invented an artificial arm, which he finds useful to those who have suffered amputation below the elbow; as the hand may be used on many occasions where much strength is not required.

the patient in walking. When the caries has been confined to the metatarsal bone of the great toe, it has been usual, I believe, after making a longitudinal and transverse incision, to saw off that part of the bone which has been found carious.

But as it is sometimes difficult to ascertain the extent of the caries, I think it is a more advantageous method of operating, to dissect out the whole of the metatarsal bone, at its junction with the cuneiform bone. I have done this after a simple incision through the soft parts; but now prefer the removal of a portion of the integuments, in a longitudinal direction, as they are usually in a thickened state, and leave a large cavity, which rather prevents the speedy healing of the wound*.

The operation is more difficult when the metatarsal bones in the middle of the foot are the seat of the disease. I have never yet attempted to take out a single metatarsal bone from the middle of the foot; partly, from

* In the amputation of a toe or finger, the confinement of purulent matter is prevented, and the cure expedited, by making a longitudinal division on two opposite sides, through that portion of the integuments, which is left for the purpose of covering the extremity of the adjoining bone.

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from an apprehended difficulty of taking up the bleeding vessels, in a wound so straitened by the contiguous bones of the metatarsus; but chiefly, from an uncertainty respecting the extent of the disease. When the smaller metatarsal bones have been the seat of the disease, I have found the integuments on the upper part of the foot in so morbid a state, that I could not determine, with satisfaction to myself, whether one or more of these bones had been rendered carious. Where only one sinus has been formed upon the foot, and that leading to a certain bone; yet the disease has affected the integuments to such an extent, that it has seemed to me imprudent to leave so much morbid integuments, as would have been left if one bone only had been dissected out. Urged by these considerations I have judged it to be the safer method (and in this opinion and practice my Colleagues at at the Leeds Infirmary have joined me) to take away all the diseased integuments, by a transverse and longitudinal incision, made at right angles to each other, and then to saw off the metatarsal bones as far as the morbid integuments extended. After an operation of this kind, the extent of the

the sore is considerable; and as no sound integuments remain projecting, so as to form a covering, the cure has always been very tedious, and the cicatrix extensive. I was once obliged, in this mode of operating, to remove all the toes, except the least, together with a large portion of their metatarsal bones. The wound was five months in healing, and broke out again in the course of a year after the Patient was dismissed from the Infirmary cured. She was a young Woman, and in other respects healthy; yet a cicatrix was not completely formed, upon her return to the Infirmary, till several months were elapsed. This operation is greatly superior to that of amputating the leg; for she was able, when cured, to walk with very little limping. However, the tediousness of the cure, and the tendency of so large a cicatrix, on the extreme part of the body, to degenerate into a fresh sore, afford some objection to this method of operating.

In the year 1797, a Case occurred that led me to a new mode of operating, which, upon repeated trial, has fully answered my expectations.

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CASE 1.

Case 1. MARY SEDGWICK, of Otley, aged 18 years, was brought to the Leeds Infirmary, on account of an ulcer on the upper part of the foot, at the root of the first and second toes. Upon examination I found the metatarsal bones carious. The integuments at the root of the third toe being hard and discoloured, I determined to remove the three first metatarsal bones, and so much of the smaller bones of the tarsus as were covered with diseased integuments. My design was to have performed the operation in the manner above described; but upon sawing the metatarsal bones, they were found to be so soft, that they might easily be cut with a knife. I did not think it prudent to leave any portion of bone that was in so diseased a state; and, in consequence of this opinion, I was under the necessity of removing the greatest part of the cuboid bone, which supports the two last toes, and to saw off also a small portion of the astragalus. This extent of disease in the metatarsus and tarsus put me under the necessity of removing all the toes, which were now rendered useless, and suggested a method

a method of finishing the operation which proved highly advantageous to the Patient. Having dissected out the metatarsal bones, and removed the toes, by a transverse incision made at their junction with the metatarsal bones; I elevated the integuments and muscles forming the sole of the foot, and applied their extreme edge (where I had cut off the toes) to the edge of the wound made through the integuments and muscles on the upper part of the foot. The parts were retained in contact by sutures. There was a considerable discharge from the wound during the first week; but a firm union afterwards took place, and a part of the foot, four inches and a half in length, remained completely covered by the natural integuments. CHAP. XXIII. Case 1.

How far this mutilated foot was capable of performing the functions of a natural one, I cannot tell, as the poor Girl was lame of that extremity from other causes.

CASE 2.

In the year 1799, I had an opportunity of repeating this operation, and found it to answer perfectly my expectations. Case 2.

MARY STANSFIELD, aged 18 years, of Holme

CHAP. XXIII. Case 2.

Holme in Lancashire, was admitted an in-patient of the General Infirmary at Leeds, under my care, on account of a caries in the metatarsal bones of one foot; upon whom I operated in the following manner.

I made a mark across the upper part of the foot, to point out as exactly as I could the place where the metatarsal bones were joined to those of the tarsus. About half an inch from this mark, nearer the toes, I made a transverse incision through the integuments and muscles covering the metatarsal bones. From each extremity of this wound, I made an incision (along the inner and outer side of the foot) to the toes. I removed all the toes at their junction with the metatarsal bones, and then separated the integuments and muscles, forming the sole of the foot, from the inferior part of the metatarsal bones; keeping the edge of my scalpel as near the bones as I could, that I might both expedite the operation, and preserve as much muscular flesh in the flap as possible. I then separated with the scalpel the four smaller metatarsal bones, at their junction with the tarsus; which was easily effected, as the joints lie in a straight line across the foot. The projecting part of the first cuneiform bone,

bone, which supports the great toe, I was obliged to divide with a saw. The arteries which required a ligature being tied, I applied the flap, which had formed the sole of the foot, to the integuments which remained on the upper part; and retained them in contact by sutures. A speedy union of the parts took place, and the wound was healed, except a very small superficial sore, at the expiration of a fortnight. The foot was not so much shortened by this operation as might have been expected. For though the metatarsal bones, which had been removed, are usually about three inches in length*, yet the mutilated foot was but one inch shorter than the sound foot, measuring from the heel to the root of the little toe; the latter being eight inches, and the former seven, in length.

The Patient could walk with firmness and ease. She was in no danger of hurting the cicatrix, by striking the place where the toes had been against any hard substance; for this part was covered with the strong integuments, which had before constituted the sole of the foot. The cicatrix was situated upon the upper part of the foot, and had

* I did not measure them in this case.

CHAP. XXIII. Case 2.

had very little breadth, as the divided parts had been kept united, after being brought into close contact.

The advantages of this operation will sufficiently appear upon inspecting the annexed Plate, in which the mutilated Foot is accurately represented from a Drawing made by the late Mr. RUSSELL, of the Royal Academy, who happened to be at Leeds before this Patient was dismissed from the Infirmary; and who favoured me with two Views of the Foot, elegantly painted in crayons.

To face Page 356.

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CHAP. XXIV.

On the Hydrocele of the Spermatic Chord.

Having been repeatedly foiled in my attempts to cure the encysted Hydrocele of the Spermatic Chord, by the same means which generally prove successful in the treatment of the Hydrocele of the Tunica Vaginalis; I shall offer a few Observations on this Disease; and describe the method of Cure which has hitherto been attended with success.

When a round or oval tumour is formed in the spermatic chord, betwixt the testis and groin, which feels like a small distended bladder; and appears transparent when held up against a candle in a dark room; the nature of the disease is sufficiently evident. But there are two other forms of this disease, which may render it somewhat obscure.

When the hydrocele of the chord is situated near the external abdominal ring, it may sometimes be pushed up into the inguinal canal; and then it greatly resembles a hernia.

The

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The distinction is, that when the hydrocele descends into its original situation, the finger and thumb may be pressed in betwixt it and the ring, and the vessels of the chord be distinctly felt.

I have known the cyst to be so loose and extended, that the fluid might be squeezed from one part of the chord to another, and be made to disappear as if it passed into the abdomen.

But a more common cause of mistake arises from the low situation of the tumour. It will sometimes extend below the testicle: in which case it greatly resembles a hydrocele of the tunica vaginalis. Yet with care these two diseases may be clearly distinguished. In a hydrocele of the tunica vaginalis, the testicle, being surrounded with a fluid, cannot be felt, if the tumour is tense, and the quantity of fluid great in proportion to the size of the testicle. But in a hydrocele of the chord, the testicle is on the outside of the cyst, and may be felt behind it.

In examining the former in a strong light, an opake substance may be perceived in the centre of the transparent fluid, unless the tunica vaginalis be much thickened. In

the

the latter, the transparency is uniform, when the scrotum is properly stretched over the tumour. CHAP. XXIV.

The hydrocele of the spermatic chord chiefly takes place in children and young persons. I have not often met with it in adults.

The method of cure which I have used with success is similar to that which was proposed by the late Mr. DOUGLAS for the cure of the hydrocele of the tunica vaginalis; and is performed in the following manner.

The operator must grasp the integuments and spermatic chord in his left hand, at the posterior part of the tumour, till he makes it project, and draws the skin tight over it. He must then divide the skin, and layers of fascia longitudinally, by repeated gentle strokes of the knife, till he arrives at the cyst, which is generally quite transparent. The projection of the cyst increases, as the parts which cover it are divided; and when it is laid bare, almost the whole of it is exposed. The cyst is then punctured with a lancet, and all that appeared perfectly transparent before the puncture, must be cut off with the knife or scissars. The posterior part of the cyst must be left untouched.

If

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If any blood-vessel or nerve of the chord should be found on the anterior part of the cyst, it must be avoided in the excision; but this difficulty, I apprehend, will rarely occur.

After the extirpation of the transparent part of the cyst, the integuments should be brought over the spermatic chord, and united, by the interrupted suture; otherwise, they are apt to shrink back, and leave the chord projecting out of the wound.

I usually cover the wound with a mild poultice, and keep the patient confined to bed, till the danger of inflammation is over. A little purulent matter is commonly discharged from the wound; and sometimes an external inflammation comes on; but this soon subsides, and a perfect union of the parts ensues.

CHAP. XXV.

A Case of Lithotomy in the Female.

MY principal design in relating the following Case is, to point out a method of preventing an incontinence of urine after the operation of Lithotomy in the female. As I have but a single Case to offer on this subject, the Reader will give it that degree of importance which he thinks it deserves. I shall not confine myself, however, to a simple relation of the method which succeeded in this instance; but shall mention some other particulars of the Case, as they are, not altogether unworthy of attention.

In July 1806, Mrs. S. aged 36 years, consulted me on account of the stone in her bladder. She had had symptoms of the disease from the age of fifteen; and within the last four or five years had suffered considerably from it. Her general health was good; her pulse about 80; and her habit corpulent.

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Having cut two female children for the stone within two years prior to this time, who had both had an incontinence of urine during several weeks after the operation; and who had not completely regained the power of retaining it when they left the Infirmary; I was very desirous of preventing this inconvenience if possible. For this purpose I had determined, that when another opportunity of performing the operation should occur, I would introduce a cylindrical tent of linen into the vagina, of such a size as to bring the edges of the wound into contact, without obstructing the passage of urine through the urethra.

I also judged it prudent to make a pretty large wound by the cutting gorget, that no laceration might be caused by the extraction of the stone.

When I had introduced the forceps, after making the incision, I could readily feel the stone, but could not lay hold of it. After a few trials, I withdrew the forceps, and introduced my finger, that I might ascertain the position and size of the stone.

I found an oblong stone encysted in the posterior part of the bladder, and so near the urethra, that I could reach the furthest part

of the cyst, from the orifice of which a very small portion of the stone projected.

I desired my Son, who assisted me, to examine the state of the parts, that we might consult upon the method of proceeding.—While his finger was in the bladder, he requested me to give him the scoop. With this he pressed forwards the posterior part of the cyst, and forced out the stone; which he immediately extracted by means of the same instrument, assisted by the forefinger of his left hand, introduced into the vagina.

What we judged to be a single stone, while covered by the cyst, proved to be two distinct stones; the contiguous ends of which formed a ball and socket, with surfaces highly polished.

Upon examination, I found a third stone in the bladder; which I extracted in the same manner, with the scoop, assisted by a finger in the vagina. This stone was of a triangular form, deeply hollowed on one side, and convex on the other. The concave side was polished, but not so highly as the contiguous extremities of the other two stones. This form and polish of the third stone made me apprehensive, that a fourth stone remained in the bladder; as the polish of the concave

CHAP. XXV.

surface could not well be attributed to any other cause than the friction of a stone in the bladder. I examined the bladder carefully, but could find no more calculous matter. I was relieved at last from my anxiety, by discovering that the extremity of the stone, which had projected out of the cyst, formed a small round protuberance, which was also highly polished. There was reason, therefore, to conclude, that attrition against this part had been the means of forming and polishing a concave surface in the third stone.

Before my Patient was placed in bed, I introduced into the orifice of the vagina a tent of rolled linen, about two inches long, and one inch thick; to which I affixed a thread of silk, that I might extract it with ease if the removal should become necessary. The size of the tent happened to suit my purpose completely; so that my Patient could expel her urine without removing it, yet lay quite dry in bed, as if the operation had not been performed.

When she made water during the two first days, a small quantity of urine escaped backwards, as she expressed it; afterwards the flow of urine was as natural as if she had not undergone the operation.

At

At the end of the third day, the tent came out while she was sitting on the night-chair, but was replaced in a short time. On the fifth and eighth days it was again expelled and replaced. On the tenth day, it had remained out some hours before I was acquainted with the accident: and now, finding that she could retain her urine perfectly, and could make water in a natural manner while the tent was out, I did not replace it any more.

She returned home (a distance of thirty miles), about a fortnight after the operation, in perfect health.

CHAP. XXVI.

A Case of Tumour on the Nose.

CHAP. XXVI.

In Sept. 1802, the late Mr. William Morris Hutchinson, of Little Hale near Sleaford in Lincolnshire, consulted me on account of an enlargement of his nose, which had taken place fifteen years before, and had gradually increased since its commencement.

The tumour extended to the lower part of the under lip; and compressed his mouth and nostrils so much, when he lay down to sleep, that he was obliged to keep a tin tube within one of his nostrils, that he might be enabled to breathe. He also generally wore this tube in the day-time, as the pressure which his mouth and nostrils suffered at all times, from the bulk of his nose, rendered breathing, without this instrument, somewhat troublesome. The tumour was in part immersed in the liquids which he drank, unless it was supported by his hand. This caution he seldom used, if I may judge from his habit after I became acquainted with him.

As an account of two Cases of a similar disease have been already published, in the

Memoirs

Memoirs of the Academy of Surgery in France; and another, since that publication, in a pamphlet, entitled *The new Progress of Surgery in France*; in all which the extirpation of the tumour was performed with success; it may seem needless to add any more observations on this subject. But since I differ in opinion respecting the nature of the Disease, from the Writers of these Cases; and think, that a more particular account of the operation may be useful; I hope that my Observations will not be unacceptable to the Reader: especially as no account of this operation having been performed in England, has yet been published, within my knowledge.

Monsieur CIVADIER, the Writer of the first two Cases, considered these tumours on the nose to be of a carcinomatous nature*; and M. DELONNES, who published the last, calls the disease "a Sarcoma tending to Carcinoma†."

The

* Description de plusieurs Tumeurs carcinomateuses situées sur le Nez. Mem. de l'Academie de Chirurgie, tome iii. p. 511.

† *New Progress of Surgery in France*, by IMBERT DELONNES, M.D. translated by T. CHAVERNAC, Surgeon.—M. DELONNES seems to have been ignorant of what the Royal Academy of Surgery had published; for he calls his operation (p. 31.) one "which no author had ever described."

CHAP. XXVI.

The disease, in Mr. Hutchinson's Case, appeared to me to be nothing more than an enlargement of the common integuments of the nose. The bones and cartilages seemed to be in their natural state. For though the latter were buried in the large mass of morbid integuments; yet, when the tumour was supported, I could distinctly trace with my finger the border of the cartilages. The tumour was divided in the middle; and at the origin of this cleft, I could discern a small portion of the natural tip of the nose. The sebaceous cryptæ were so much enlarged, that some of them would admit the end of a crow's quill.

Encouraged by the success, which had attended the extirpation of the tumours in the Cases above mentioned, and by my own experience in a similar disease of less magnitude, I proposed to Mr. Hutchinson the removal of this unsightly tumour, which arrested the attention of every one whom he met in the streets. To this proposal he readily assented.

The great difficulty in this operation was, to preserve the natural figure of the nose, while I removed the morbid integuments. To effect this, I caused the tumour to be supported, till I could distinctly feel with my finger the border of the cartilaginous part, which

which gives the nose its proper figure. I marked out this border upon the inferior part of the tumour, while steadily supported, with a pencil moistened with Indian ink; and then, allowing for the thickness of the cartilage, and a proper covering of adipose membrane, I made my first incision parallel to the line which I had drawn. I pursued the dissection upwards; having, by this method, the natural figure of the nose in view. When the principal portion of the mass was removed, I reduced the remaining part of the adipose membrane to an even surface, by means of the tonsil scissars, preserving as much as possible the natural shape of the nose.

The hæmorrhage during the operation was considerable, and found employment for four assistants; who compressed with their fingers the principal divided arteries, as I pursued the dissection. Mr. HUTCHINSON, though a stout man, had nearly fainted before the operation was finished: but as soon as the enlarged parts were removed, the hæmorrhage ceased spontaneously, and did not return.

The cicatrization proceeded in a very favourable manner; so that it was nearly completed in twenty-three days. About this time the weather became cold; and as my Patient did

The disease, in Mr. HUTCHINSON's Case, appeared to me to be nothing more than an enlargement of the common integuments of the nose. The bones and cartilages seemed to be in their natural state. For though the latter were buried in the large mass of morbid integuments; yet, when the tumour was supported, I could distinctly trace with my finger the border of the cartilages. The tumour was divided in the middle; and at the origin of this cleft, I could discern a small portion of the natural tip of the nose. The sebaceou cryptæ were so much enlarged, that some o them would admit the end of a crow's quill.

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CHAP. XXVI.

did not confine himself to the house, the state of the air seemed to have some effect on the tender cicatrix, which gave way in two or three places; so that a firm cicatrization was not effected till about the end of November. After this time it remained firm without further excoriation.

Before the operation, I was apprehensive that the cicatrix would have a different appearance from the rest of his face; and I made him acquainted with my apprehension. But in this I was agreeably disappointed. For, the skin of his face being somewhat red, the cicatrix was not discernible without a close inspection; and not the least deformity remained. No tubercles arose afterwards upon his nose; but the cicatrix remained smooth to the time of his death, which took place about three years and a half after his cure.

The annexed PLATES will give the best idea of the advantage which he derived from the operation. The Drawings were made by that excellent painter, the late Mr. RUSSELL, who happened to come to Leeds a short time before the operation, and remained here till the cure was completed.

APPENDIX.

Communicated by Mr. ASTLEY COOPER.

CASE

OF STRANGULATED FEMORAL HERNIA WITH MORTIFIED INTESTINE.

ANN TENANT, aged 34 years, was sent to St. Thomas's Hospital on Tuesday the 17th of May 1808 (by Messrs. BROWNE and BUNGEY, Surgeons, at Rotherhithe) labouring under symptoms of strangulated hernia, and was immediately admitted as a Patient to Mr. CHANDLER.

An erysipelatous inflammation appeared in the left groin, under which there was a small tumour, seated on the outer side of the tuberosity of the pubis, and immediately below the crural arch; and as this was attended with constipation of the bowels, and with frequent vomitings, it was concluded that

that the disease was a femoral hernia in a strangulated state. The symptoms of strangulation had commenced on the 13th. Her strength was much reduced, and she stated that she was three months gone with child.

I was requested to see this Patient at twenty minutes after one on the day of her admission; and at ten minutes before three o'clock, in consequence of Mr. CHANDLER'S absence, I performed the following operation:

An incision was made upon the tumour in the form of a ⌐ reversed ⌐; and as soon as the integuments were divided, the sac and its coverings appeared in so sloughy a state, that there was no necessity for using the knife; they were easily torn open and turned aside by the finger, and the intestine became exposed in a completely gangrenous state. I then divided the stricture in a line towards the umbilicus, that is, upwards and inwards; and, placing a bason under the intestine, I made an incision into it of about an inch and half in length, and thus discharged not only the contents of the protruded portion of bowel, but emptied the intestine within the abdomen. A poultice was then applied, and the Patient returned to her bed.

Immediately after the operation, her pulse

was

was at 48; but in two hours it arose to 70, at which time her sickness had ceased, and she no longer complained of pain at the scrobiculus cordis.

At eight in the evening, her pulse was 100, and full; she had a considerable discharge of fæces from the artificial anus; the abdomen had ceased to be tender, and she was much disposed to sleep.

May the 18th, one P. M.—About midnight she was again attacked with pain in the scrobiculus cordis, vomiting and hiccough; and the abdomen had become tense and painful; her pulse was 105 and irregular, and she frequently ejected air from her stomach: the skin about the wound was much inflamed.

19th. The pulse was 100; the vomiting and sickness had declined; the wound was less inflamed.

20th. Pulse still irregular, but her countenance was natural, and the vomiting and hiccough had entirely ceased; she had slept for five hours last night; the discharge by the artificial anus was free.

21st. The pulse and discharge as yesterday. Her diet, which had hitherto been barley-water, tea and toast, was now changed to wine, jellies,

[illegible] and puddings, by Mr. CHANDLER's direction.

[illegible] The mortified portion of the intestine was sloughing away.

[illegible] The mortified portion of intestine had sloughed away, and the wound looked clean.

[illegible] She passed fœtus by the rectum, and was at three o'clock in the morning attacked with violent pain at the scrobiculus cordis, but it ceased in a few hours.

[illegible] She had a discharge of hardened fæces by the rectum.

[illegible] She had a second discharge of hardened fæces per rectum: the discharge from the artificial anus still free; her pulse about 70, and regular.

29th. She had a discharge of dry fæces by the rectum, another on the 1st of June, and a fifth on the 2d.

June 3d. She had great pain about the umbilicus last night, and a profuse discharge from the artificial anus.

4th. A discharge of fæces by the rectum.

7th. The wound in the inguen diminishes; but a profuse discharge continuing from the artificial anus, she was ordered some opium, which succeeded in checking it.

On

On the evening of the 11th, she had a free evacuation by the rectum; another on the 15th, and on the 18th. For four or five days previous to the 18th, she was allowed the common food of the hospital.

20th. The wound in the groin was very much diminished, and on the 21st a truss was applied for three hours; but its pressure occasioning some pain, it was removed; but was ordered to be reapplied after the force of its spring had been diminished.

26th. She was dressed, and sitting by the side of her bed. She has had no discharge from the artificial anus since the 23d; but not being able to bear the truss, even in its altered state, a piece of lint was applied upon the wound, and a long roller over it.

The fæces after this time took generally their natural course; but she sometimes had a feculent discharge from the wound, which irritated the surrounding skin, and rendered it necessary frequently to wash the part with a solution of fuller's earth.

She was discharged from the hospital on the 14th July 1808, a few days after which she applied the truss; and in three weeks from her dismission the wound had completely healed, and never afterwards opened.

On

On the 23d of October 1808, she was brought to bed of a full-grown child, which was born dead, and much deformed in its lower extremities.

In about five weeks after her delivery, she again became pregnant, and in a month afterwards miscarried; from that time she has continued well in every respect, and only wears the truss when exposed to unusual fatigue.

For many of the foregoing particulars I am indebted to Mr. HENRY ROOTS, Surgeon, at Kingston, who was Mr. CHANDLER's dresser at the time, and manifested the most anxious attention to this poor Woman.

From the foregoing history, it appears that [illegible] treatment of a mortified intestine [illegible] hernia, consists in the two [illegible] circumstances:

[illegible] the stricture so as entirely [illegible] cause of strangulation; and,

[illegible] making an opening into the intestine to give a free outlet for the discharge of the accumulated fæces in the intestine above the abdomen. If the stricture [illegible], the constipation, hiccough, [illegible] continue but if the intestine

is

is opened, the patient in a few hours becomes relieved of those symptoms.

This Case will serve as an answer to a Query in the London Medical Review for April 1808. "It remains for the candid "observation of those who have had an op- "portunity to determine, Whether in cases "where the patient survives the operation, "the removal of gangrenous intestine by the "scissars is, or is not, an objectionable prac- "tice; and whether it is giving a fairer "chance of recovery to second the efforts "of the constitution during the process of "separation, while we facilitate by a free "opening the evacuation of the alimentary "matters?"

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